

XVIII. REVISION OF THE ORIENTAL
TIPULIDAE WITH DESCRIPTIONS
OF NEW SPECIES.

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The present paper may be regarded as an annotated catalogue of Oriental Tipulidae; composed of (1) the species given in Van der Wulp's catalogue with such notes as appear to be of interest.¹ It is significant that no corrections are necessary as to their generic location. This is directly due to the fact that Osten Sacken, who must be regarded as, *par excellence*, the principal authority on this family, had already worked through them and placed practically all of them in their proper genera: (2) such species as have been described since Van der Wulp's catalogue: (3) the disposition of the types of as many species as possible with notes on their present condition: (4) over fifty new species herein described, preserved in the Vienna Museum, Indian Museum, Pusa collection or my own; and (5) the erection of eight new genera, formed, in two cases by the splitting of *Monzoma* and *Cladura* into three genera each, and in other cases through the discovery of several new forms that cannot be satisfactorily placed in any of the existing genera.

It is not without considerable hesitation that these new genera are proposed, since Osten Sacken repeatedly warned students in this family of the necessity of great circumspection in this matter, owing to a general tendency in the Tipulidae to adventitious variation, more especially in the venation. I have little doubt, however, of the generic stability of all those now suggested. Moreover there are several undescribed species in the Indian Museum the generic position of which is still most uncertain. One genus, *Trichocera*, I venture to remove from the Limnophilini to the Amalopini, regarding it, after mature deliberation, more akin to the genera of the latter section.

It may be noted that in addition to the new species herein described I have descriptions completed in MS. of nearly 140 others from different parts of the East, and these will be published in my forthcoming work on certain families of Nematocera in a volume for the "Fauna of British India" series.

This will make the total number of species of Tipulidae known to exist in the Oriental region, over 370, an *increase* of over 150 per cent. on the number known only fifteen years ago!

¹ Of these (about 140 in number), since Van der Wulp's catalogue is easily accessible, it seems unnecessary to add references, but references are given to all species described since the publication of that catalogue. These latter are forty-five in number.

It is with the greatest pleasure that I sincerely thank those gentlemen who have so kindly assisted me with notes on the types of many of the species; information which has enabled me to make the present paper far more complete than it would otherwise have been.

Through the kind introduction of my oldest friend in entomology, Mr. C. O. Waterhouse, I have obtained from Mr. Hill a very valuable series of notes on such types as repose in the British Museum, these including the bulk of Walker's species. Herr Handlirsch of the Vienna Museum has furnished me with most useful information respecting such of Doleschall's types as remain in the collection of that Institution, and Dr. F. A. Jentink has rendered me a like service concerning the types in the Leyden Museum. Dr. J. C. de Meijere has supplied information respecting types in the Amsterdam Museum, besides other notes of importance, whilst Prof. R. Gestro sent me a list of the species in the Genoa Museum; with their localities and the regret that they are "all in more or less mediocre condition." The useful notes from Dr. A. Brauer of Berlin, Mr. Lundbeck of Copenhagen, Mr. Bedot of Geneva and several others are incorporated, with due acknowledgment, under the species they concern.

A certain number of types are definitely known to be lost, whilst many others, owing to the extreme fragility of the species in this family, are reduced to mere fragments of no practical use for identification, except as regards a few species where the conspicuous markings of the wings would probably determine the species.

Several of Doleschall's types I have been unable to trace; Dr. Meijere writing me that they are certainly not in Holland, and (respecting some of Van der Wulp's species) that this author's collection was considerably damaged by anthrax, so that these are probably lost.

Of some of these species, however, there exist in the same collection other specimens in better condition, these presumably having been identified by means of the types before the latter were reduced to fragments.

A few of Osten Sacken's species described from the Philippine Islands have not been traceable, and also some of Walker's, described in his "Insecta Saundersiana (Diptera)." Saunders's collection was I believe disposed of in small portions in different directions, and some of these are, apparently, not to be found.

Subfamily *PTYCHOPTERINAE*.

PTYCHOPTERA, Mg.

Ptychoptera distincta, mihi, sp. nov.

♀. Darjiling. Long. 9 mm.

Head.—Frons, vertex and back of head, black: frons one-fourth width of head. Epistome bulbous, shining brown, bare;

proboscis normal, yellow; palpi long, yellow. Antennal scape brownish yellow; flagellum black, shortly pubescent.

Thorax wholly shining black, bare.

Abdomen black, microscopically pubescent; basal two-thirds of second joint and basal half of third joint reddish orange. Tip of last segment and the ovipositor reddish yellow.

Legs.—Coxae reddish yellow; femora at base concolorous, deepening to brown at tip; tibiae and tarsi black. Except the coxae, which are nearly bare, legs wholly shortly and thickly pubescent.

Wings very pale grey, yellowish brown on the costal part. A dark brown central cross-band along the middle cross-veins from the origin of the second vein to the tip of the fifth vein, also a large apical brown part enclosing the forks of the third and fourth veins, both these brown parts in the wing being connected with the costal darkening. Halteres black.

Described from one ♀ in the Pusa collection taken by Mr. Howlett, 3—9-vi-09, at Darjiling (7,000 feet).

***Ptychoptera tibialis*, mihi, sp. nov.**

♂ ♀. Darjiling. Long. ♂ 7-8, ♀ 9 mm.

Head.—Frons shining black, smooth, bare: eyes widely separated: back of head brown: face below antennae, under side of head and palpi all bright yellow; antennae fifteen jointed; 1st joint cylindrical, yellow, brown towards tip; 2nd short, bead-like, dark yellow, mixed with brown; 3rd as long as the next two together; remainder elongated, compressed at each end, black; antennae minutely and thickly pubescent, and with moderately long scattered hairs throughout.

Thorax.—♂: Aënous black, bare, shining, suture separating the prothorax rather deeply cut; humeri bright yellow, a white dusted patch in front on dorsum of prothorax. The mesothorax is divided from the metathorax by a distinct suture, which on reaching the extension of the prothorax, follows it posteriorly and divides the rear portion of the metathorax by a deeply cut suture with a small yellow V-shaped spot in the middle of it, this suture reaching the small bright yellow scutellum. Posterior calli raspberry-red, enlarged, elongated and extending from the scutellum to the base of the wings. Sides of thorax shining black, a yellow scaly mesopleura connected with the yellow base of the wings; metapleurae with silvery sheen, seen from above; metanotum large, shining aënous black, square shaped, bare.

In the ♀ the thorax is orange, with a black stripe each side of the dorsum, the suture blackish: a large black mark below the scutellum, which latter, with the whole metanotum, is orange.

Abdomen.—♂: Bright light orange-brown, tending towards yellowish; 1st segment all blackish, 2nd elongated, black at base and tip; the next three segments black on posterior border.

♀ : Orange-brown, 2nd segment yellowish. Belly entirely orange-yellow ♂ ♀. The ♂ genitals very large, complex, bright reddish orange, with some close black pubescence: ♀ genitals narrow, cylindrical, concolorous.

Legs.—Coxae bright yellow, hind pair black on the outside of the basal half: femora bright yellow, hind pair black on the basal two-thirds except at the extreme base; anterior tibiae yellow with the extreme tips dark brown, the middle pair slightly darker on the basal half, the hind pair with basal half black except the extreme base; on the apical half the bright golden yellow hair is very thick; tarsi blackish brown. The legs throughout are closely pubescent, the pubescence being concolorous with the ground colour.

Wings yellowish grey, beautifully iridescent, unmarked, minutely pubescent on posterior border; venation as in *P. contaminata*, veins dark brown; halteres bright yellow.

Described from several examples taken by me at Darjiling (7,000 feet), 7—16-x-05 and 30-ix-08. Type ♂ in Indian Museum. Type ♀ and cotype ♂ ♂ in my collection; cotype ♀ from Darjiling in the Vienna Museum.

N.B.—Normally *Ptychoptera* should have 16-jointed antennae, but the 3rd joint in this species is as long as the next two together, and occasionally it appears as if two joints were present, but a careful examination convinces me that it is single. In most of the specimens the whole antennae are certainly present and undamaged. The species, however, cannot possibly be removed from this genus, it being in every character a true *Ptychoptera*.

Ptychoptera atritarsis, mihi, sp. nov.

♀. N. Bengal. Long. 8 mm. (without ovipositor).

Head.—Whole upper part from the vertex down to the antennae, black, bare, shining; face below antennae, proboscis, palpi (except black tips) wholly orange-yellow. Antennae black, but microscopically covered with hoary dust; scapal joints orange-yellow, a few hairs on all the joints. Eyes black, the orbit at the sides brownish yellow, with a set of black hairs, orbit disappearing at the vertex. Neck yellow.

Thorax orange-yellow, practically bare, dorsum slightly ferruginous. A black stripe on the front of the prothorax, which is carried downwards as far as the fore coxae; two small black spots on the dorsum behind the upper end of this stripe. A black stripe begins widely on each humerus, extending narrowly backwards to the middle of the metanotum, spreading inwards slightly at the base of the wings, and narrowly interrupted immediately behind their insertion. Under side of thorax shining coal-black, but the sides of the mesothorax are orange-yellow, and a thick scaly process issues from the base of the wings, proceeds widely downwards nearly to the middle coxae, and then bends

hindwards and upwards, joining the scutellum, enclosing the base of the halteres in its path. A narrow black line runs interruptedly round the posterior border of the thoracic dorsum, replaced immediately in front of the scutellum by two small black spots. Metanotum oblong, large, traces of a black central streak. Scutellum oblong, elevated but moderately small, supported at each corner by a pronounced scutellar ridge.

Abdomen orange-yellow, with a few irregular hairs; 1st segment with a yellowish white shimmer at the extreme base in front; a narrow black cross-band on the dorsum near the base of the segment, which line is continued forwards along the sides of the abdomen as far as the base. Posterior borders of all the segments, including the 1st, on which it is widest, but excluding the last, with a blackish irregular band. Ovipositor in the shape of two blades close together, orange-yellow. Belly uniformly orange-yellow.

Legs.—Coxae lemon-yellow, the hind pair having two small black spots on the hinder side at the base. Femora and tibiae uniformly bright orange-yellow with minute closely-set concolorous pubescence. Tarsi wholly coal-black.

Wings yellowish grey, costal cell yellow, veins black, halteres yellow.

Described from two ♀♀ nearly perfect and in first class condition in the Indian Museum collection from Siliguri, at the foot of the Darjiling hills, taken 18—20-vii-07.

TANYDERUS, Phil.

ornatissimus, Dol., ♂ ♀ (*Cylindrotoma*). Amboina.

Of this species Osten Sacken (Berl. Ent. Zeits., xxxi, 228) gives a fuller description, based on an original coloured drawing of a ♂ by Doleschall but never published, and also on a ♀ in the Vienna Museum. He notes an error in Doleschall's description, in which the antennae are said to be 16-jointed whereas he distinctly observed 22 joints, both in the author's coloured drawing and in the type ♀ at Vienna, which latter is now somewhat damaged.

Subfamily *TIPULINAE*.

Section I. CTENOPHORINI.

CTENOPHORA, Mg.

Two species have been introduced as Oriental members of this genus. The first, *xanthomelaena*, Wlk. (List Dipt. Brit. Mus., i, 77, from East India), exists apparently in the type specimen only, which is in the British Museum, in good condition still; but as it is a ♀ it is impossible to be sure that the species does not belong to *Pselliophora*, Os. Sac.

If this latter is the case, then the genus *Ctenophora* does not occur in the East at all. *Ctenophora* is in fact confined to Europe, Siberia and North America, with the exception of a single species from Persia; whilst *Pselliophora* is confined to the eastern tropics, also with one exception, *fumiplena*, Wlk., from China. This species even might have been regarded as doubtful but that Osten Sacken has examined the type, at the British Museum, where some other specimens also from China appeared to him to be a variety of the species.

The other recorded species, *C. melanura*, Wlk. (List Dipt. Brit. Mus., i, 78), is not even a Tipulid at all, but is a large *Sargus* (Stratiomyidae), as stated by Osten Sacken, after an examination of the type in the British Museum.

It is true, however, that there is yet one species recorded as *Ctenophora* of which the locality is unknown (*C. constans*, Wlk., Ins. Saund. Dipt., 448, ♀), but the probability is that it is not Oriental.

PSELLIOPHORA, Os. Sac.

Table of species.

[The figures prefixed to the specific names represent the length in millimetres.]

- A Tibiae with at least the hinder pair with pale coloured ring near the base.
- B Wings mainly or wholly yellowish, or at least pale; usually with a brownish tip (very pale yellow in *stigmatica*).¹
- C Hind tibiae only with a pale ring.
- D Thorax reddish yellow, with three indistinct stripes ♀ 16 *ardens*, W.
- DD Thorax wholly black .. ♂ 17, ♀ 14 *nigrithorax*, Meij.
- CC All the tibiae with a pale ring.
- E Hind tibiae straight.
- F Wings practically without dark marks.
- G Reddish orange species; thorax unmarked ♂ *rubra*, Os. Sac.²
- GG Bright yellow species; thorax black marked and abdomen with a transverse black band on each segment ♀ 15 *stigmatica*, Meij.
- FF Wings with distinct brown marks.
- H Tip of wing only, brown, broadly so .. ♂ 14 *compedita*, W.
- HH Tip of wing broadly brown, a median band also present ♀ 16 *bifascipennis*, sp. nov.
- EE Hind tibiae curved. (Incl. ovip.) ♀ 16½ *curvipes*, Wulp.
- BB Wings brown or blackish, either unicolorous or with lighter spots (base yellow in *laeta*).

¹ In my *bifascipennis* there is a considerable quantity of brown in the wing but the prevailing ground colour is yellow.

² Osten Sacken omitted to give the length of his species.

- I Body reddish yellow, with black markings (in *divisa*, deep ferruginous, apical half of abdomen black).
- J Wings either with a pale longitudinal streak near middle, or wholly brown or blackish.
- K Femora wholly black 17 *divisa*, sp. nov.
- KK Femora black, with yellow bases
12 *fuscipennis*, Mcq. (*javanica*, Dol.)
- KKK Femora yellow, black towards tips 14-20 *gaudens*, Wlk.
- JJ Wings with distinct, bright yellow marks.
- L Wing with only two large spots and a small intermediate one ♂ ♀ 14 *laeta*, F.
- LL Wing with seven yellow spots, some of them confluent (variable).. .. ♂ ♀ 14 *taprobanes*, Wlk.
- II Body velvety black, with yellow markings.
- M Wing uniformly black or blackish
♂ 12-14, ♀ 15-16 *dolens*, Os. Sac.
- MM Wing blackish, with pale streaks and four white spots (three of them forming a band)
♀ 16 *fumiplena*, Wlk.
- MMM Wing brown, with a white spot in the middle.
- N Scutellum black 14-15 *suspirans*, Os. Sac.
- NN Scutellum yellow 14-15 *idalia*, Os. Sac.
- AA Tibiae without a pale ring on any of them.
- O Wings yellowish, with or without dark bands or markings.
- P Moderately large species, 12 to 16 mm. long.
- Q Wing with black or brownish marks.
- R Flagellum not serrate (presumably) 16 *chrysophila*, Wlk.
- RR Flagellum deeply serrate on under side
12 *serraticornis*, sp. nov.
- QQ Wing pale yellow, wholly unmarked
12 *immaculipennis*, sp. nov.
- PP Very large species ♀ 30 *terminalis*, sp. nov.
- OO Wings dark brown sometimes cells lighter in centre, or base yellow (*insignis*).
- S Moderately large species; at most 20 mm.
- T All femora wholly black.
- U Wing broader, darker brown (in type ♂ ♀), or with faint paler streaks (variety)
♂ 12 ♀ 18 *incunctans*, Wlk.
- UU Wing narrower, lighter; all cells with clear centres, except costal ones .. ♀ 20½ *annulosa*, Wulp.
- TT All femora with apical part yellow to a greater or less extent ♂ 17 *insignis*, Meij.
- SS Very large species (recorded as a *Ctenophora*)¹
♀ 28 *xanthomelaena*, Wlk.

¹ Recorded as a *Ctenophora*, but the ♂ not being known it may provisionally be removed here, as no species of *Ctenophora* is certainly known from the East. Inclusion in this table also shows its affinities.

LIST OF, AND NOTES ON, THE PREVIOUSLY DESCRIBED SPECIES OF
Pselliophora.¹

ardens, W., ♂ ♀. Type (♀), Java, in Westermann's collection in the Vienna Museum, in which institution there are seven specimens from Lombok, representing both sexes. The ♂ does not appear to have been previously recorded. It is in every way similar to the ♀ except for the sexual characters of antennae and genitalia, both of which are wholly black, the latter very large and conspicuous.

nigrithorax, Meij. (1904). Bijd. tot. de Dierk., xvii, 87, ♂ ♀.

Prof. Meijere notes that the description offered was drawn up by Van der Wulp. The ♂ is from Tjibodas Gede, and the ♀ from Sakabumi (both Java). Types in Amsterdam Museum.

compedita, W., ♂ (?), ♀. Java.

Type in Westermann's collection from Java. Van der Wulp notes (Notes Leyd. Mus., vi, 25) three ♂ ♂ that he considers belong to this species, though they differ from Wiedemann's description of the ♀. They are from Haroeka, Celebes and (?) Aru.

rubra, Os. Sac., ♂. The unique ♂ in the Berlin Museum is from Laos, Siam, taken by Mouhot.

stigmatica, Meij. (1904). Bijd. tot. de Dierk., xvii, 88, ♀, pl. viii, 1 (full insect, coloured).

One ♀ from Lahago, Central Nias Island. Meijere adds some notes respecting its position in the genus. Type in Amsterdam Museum.

curvipes, Wulp, ♀. "Closely allied to *compedita*;" hind tibiae arcuate. Type (a single ♀ from Gorontalo) in the Leyden Museum.

fuscipennis, Mcq., ♂ ♀.

Ctenophora javanica, Dol.

Described originally (erroneously) from "Brazil," Osten Sacken (Berl. Ent. Zeit., xxx, 172) doubted it being a South American species, and having subsequently (V. d. Wulp Cat., p. 36) seen the type in Bigot's collection, found it labelled "Java" and identical with *C. javanica*, Dol. Van der Wulp was the first to describe the ♀ and observes that in this sex the antennae appear a little serrulated, by the slight dilation of the joints of the flagellum on the under side. From Java (in the woods round Djocjokata, and at Ardjoeno).

gaudens, Wlk., ♂ ♀. The type ♂ and ♀, with another ♀ (from Makassar), are in the British Museum. The Vienna Museum has two ♂ ♂ from S. Celebes. A variable species, as indeed many of the *Pselliophorae* appear to be.

chrysophila, Wlk. ♀. Incorrectly quoted *chrysopila* by Van der Wulp. Type (♀) in British Museum, from Singapore, in good condition, and apparently the only specimens seen since are two

¹ All the earlier species were described under *Ctenophora*, but it seems unnecessary to emphasize this point here after each species.

♀ taken by Dr. Annandale at Bhim Tal, 19—22 xi-06, one of which was laying its eggs in the damp hollow of a tree.¹

incunctans, Wlk., ♂ ♀.

Ctenophora velutina, Wulp.

From Celebes, Tondano and Saugir.

Van der Wulp, in his catalogue (p. 37), notes that though Osten Sacken at first (Berl. Ent. Zeit., *l.c.*) thought *velutina* distinct from *incunctans*, Wlk., the inspection of a ♂ and ♀ from Celebes in Bigot's collection decided him as to the identity of the two forms, and the variability of the species; and he wrote the Dutch author to this effect. The type ♂ and ♀, and an original second ♀ are all still in the British Museum in good condition. Walker gave 8 to 10 lines as the length (presumably of both sexes); Van der Wulp, in redescribing *incunctans*, gives ♂ 12, ♀ 18 mm., and 19 mm. as the length of his "sp. nov. *velutina*," also from Celebes.

A ♂ and ♀ in the Vienna Museum have wholly black thorax, abdomen and legs; wings deep blackish brown without trace of any lighter streaks. The only colour in the insect is the deep orange-yellow of the head above the antennae, the colour extending behind the eyes and reaching the lower part of the head but leaving the whole face quite blackish. Both specimens are from Palawan.

In the same collection are a ♂ and ♀ with the whole head, thorax and coxae bright orange, the colour reaching in the ♂ to the base of the fore femora; also over the first, and across part of the second abdominal segment. The wings are wholly blackish brown. Both specimens from Samanga, Celebes, taken in November.

A fifth specimen in the same collection is from the latter locality also and answers exactly to Van der Wulp's *velutina*, having only the disc of the thorax orange, a broad band of the same colour across the vertex, and a small round dull orange spot in front of each wing. The lower part of the thorax, behind the wings, with the scutellum and metanotum, have a distinct brownish tinge, which gives the impression that in some individuals this part might quite possibly be brownish yellow in colour.

incunctans, Wlk. (if the above opinions are correct), may be described thus:—

Head and thorax ochraceous yellow (sometimes in ♀, disc of thorax only, of this colour). Abdomen ochraceous or reddish yellow at base (probably the extent of the colour is variable); the remainder black; sometimes the whole abdomen black. Legs black, occasionally (at least in the ♂) the fore coxae and base of fore femora orange-yellow. Wings rather dark brown, sometimes with some whitish streaks or pale centres to the cells, not very conspicuous.

¹ See Rec. Ind. Mus., i, 83.

laeta, F., ♂ ♀. Type in the Fabricius collection in the British Museum; but no information is to hand as to its condition.

Apparently commonly distributed throughout India. Van der Wulp records it from Bombay, Sind and Ceylon. The Indian Museum possesses it from Trivandrum, iv-1889; Bangalore; Dehra Dun; Calcutta, 13-vii-07.

In the Vienna Museum and my own collection, in both cases from Ceylon. This and the following species bear some considerable resemblance to each other, but are easily recognized by the characters given in the table.

Van der Wulp quotes "pl. ii. 1" as a figure of this species in Wiedemann, but I find no such figure. In the Pusa collection are a ♂ and ♀ taken *in cop* in the Shevaroyes (4,000 ft.), (Madras Presidency), 26-viii-07 on coffee bushes. In the Indian Museum are two specimens that represent well-marked varieties of this species, to one of which a name is given. The first specimen is from Katiyar, Purnea District (N. Bengal), and is a ♀ in good condition taken by Mr. Paiva, 23-iii-09. It differs from the typical form by all the cells on the posterior half of the wing being pale grey in their centres; one or two cells being almost entirely clear. The 3rd, 4th and 5th abdominal segments have a subquadrate black spot on the dorsum of each.

The second specimen I term var. *trilineata*, from the presence of the usual three tipuliform black thoracic stripes, the median one extending over the anterior margin on each side as far as the front coxae. The outer stripes are replaced behind the suture by a large spot each side. There is a blackish mark on the pleura below the wing, and the hinder side of the metanotum is shining black. The wings have the clear spaces as in the preceding variety though not quite so obvious, and the last two or three abdominal segments are blackish, some distinct darkening of the preceding segments being noticeable. The yellow colour of the legs is deep chrome, not orange. It was taken by Mr. H. L. Andrewes, September 1910, in the Nilgiri Hills (3,500 ft.).

The yellow marks on the wing in both forms are so exactly like those in the typical form that they cannot be regarded but as varieties.

taprobanes, Wlk., ♂ ♀. Type (♀) with two other ♀ ♀ in good condition in the British Museum, from Ceylon, which seems its only habitat, where it is not at all uncommon. Also in the Vienna and Indian Museums and my collection. The ♂ is much less common than the female and I believe has not been described, but it is present in the Indian Museum and shows no peculiarities beyond the ordinary sexual differences.

doiens, Os. Sac., ♂ ♀. Described from two ♂ ♂ and one ♀ from the Philippines.

fumiplena, Wlk., ♀. China. Very variable in the proportionate amount of black and yellow colour in the body, according to Osten Sacken, who has examined the type in the British Museum (a ♀ in good condition) with some other examples from China.

suspirans, Os. Sac., ♂. Described from three ♂♂ from the Philippines, one of which has the usually yellow portion of the thorax almost whitish.

idalia, Os. Sac., ♂. One ♂ from the Philippines.

annulosa, V. d. Wulp, ♀. Type (a single ♀ from Java) in the Leyden Museum. As compared with *incunctans* this species may be described as with "wings narrower, lighter, all cells with clear centres except costal ones; thorax all black."

As Van der Wulp notes that the venation of his species is identical with that of *incunctans* and *velutina*, there is a possibility of this species also being synonymous with *incunctans*.

insignis, Meij. (1904). Bijd. tot. de Dierk., xvii, 87, ♂.

One ♂ from Tosari (Java). Apparently distinct by the apical part of the femora being yellow, the extent of the colour differing in each pair of legs. There is some resemblance in the abdominal markings to those of *incunctans*, and a similarity in the black antennae and brown wings with indistinct clearer spots. Type in Amsterdam Museum.

xanthomelana, Wlk., 1848. List Dipt. Brit. Mus., i, 77, ♀, *Ctenophora*. This, as stated in a footnote to the table of species, is only provisionally placed here, pending the discovery of the ♂. Recorded from East India, its size (28 mm.) easily distinguishes it from all other eastern species except my new species *terminalis* (30 mm.). Type in British Museum, from East India, apparently the only specimen known, in good condition.

***Pselliophora bifascipennis*, mihi, sp. nov.**

♀. Shanghai. Long. 16 mm.

Head wholly dark mahogany-brown. Proboscis with a little brown hair at tip and at sides; palpi brownish yellow, last joint elongate, slender, marked with black. Antennae wholly bright chrome-yellow; 2nd joint of scape small and short; 1st flagellar joint about as long as 1st scapal joint, 2nd only half as long, broader at tip, 3rd sub-globular, the following seven annular, apical joint very small, conical.

Thorax dark mahogany-brown; prothorax, or collare, and dorsum of thorax, chrome-yellow, the latter part with a broad medium dark brown stripe from anterior margin (where it is broader) to the suture, and an outer stripe each side, broadly interrupted at the suture, behind which it is much wider and in the form of a shorter and a longer spot. These lateral stripes fail to reach the anterior margin by a considerable distance. Scutellum dark mahogany-brown, as is also a central spot on the metanotum, the rest of which is bright yellow. A small oval yellow spot on the pleurae between the first and second pairs of coxae.

Abdomen.—The 1st segment black, with a narrow bright yellow hind border carried round the sides, where it widens; 2nd segment bright yellow, hind margin black, the colour extending over the sides, where it gradually disappears. Following segments black,

the anterior part of the side of each, yellow. The ventral plates marked similarly to the dorsal ones, and well demarcated from them; ventral surface of 2nd segment wholly yellow. Ovipositor comparatively short, rich shining brown, the lower pair of valves much the shorter.

Legs.—Coxae dark brown, anterior pairs a little yellow in front. Femora and tibiae bright yellow, the latter very narrowly brown at the tips, and with a pale, hardly visible whitish ring near their bases. Metatarsi yellow, narrowly brown at tip, remainder of tarsi black.

Wings.—Venation normal; contact of 2nd posterior cell and discal cell almost punctiform, costal cell, stigmatic cell, and extreme base of wings pale lemon yellowish, remainder of wing pale yellow. Wings brown on apical part, the colour wholly filling the marginal and 1st posterior cell, the submarginal and discal cell all but narrowly at their bases, and encroaching on two-thirds of the 4th posterior cell and some part of the 5th. A similarly coloured broad brown band from the 1st longitudinal vein to the posterior margin, wide enough to fill more than the middle half of both basal cells, and dividing just behind the 6th longitudinal vein, leaving a comparatively clear spot of some size, touching the hind margin of the wing. The tip of the costal cell is a little brown also. Halteres deep dull yellow.

Described from a single ♀ labelled “Consul Haas,” Shanghai. *Type* in the Vienna Museum.

***Pselliophora divisa*, mihi, sp. nov.**

♀. East Indies. Long. 17 mm.

Wholly deep ferruginous, except the head, the last four abdominal segments with the ovipositor, and the legs, all of which are black, the latter possessing a narrow whitish band on the tibiae near the base, on the first and third pairs of legs (the middle pair is missing). Wings blackish, rather dark, the 2nd posterior cell scarcely sessile.

Described from a unique specimen marked “East Indies, Felder, 1892.”

Type in the Vienna Museum.

(?) *Pselliophora serraticornis*, mihi, sp. nov.

? ♂. Ceylon. Long. 12 mm. (incomplete).

Head brownish yellow, vertex a little grey tinged. Palpi blackish. *Antennae very conspicuous*: scape brownish yellow, 1st joint a little over twice the length of the 2nd; flagellar joints very deeply serrate on under side in the shape of two pendant lobes to each joint, of equal size and length, the proximal one black, the distal one brownish yellow. The last flagellar joint (11th) has a conical tip, with a small distinct apical style. Each joint bears a verticil of hairs (four in number) at its base.

Thorax brownish yellow, more yellowish anteriorly. Three darker dorsal stripes; the median one rather broad, and bisected by a narrow dark brown line, with which all the stripes are rather sharply delineated. Two spots behind the suture of similar colour and delineation, of normal shape, the anterior one approximately rounded, the hinder one more oblongo-triangular. Pleurae a little greyish.

Abdomen brownish yellow; the segments blackish marked on the hind margins towards the sides. (The apical half of the abdomen is wanting.)

Legs.—Coxae and femora brownish yellow; tibiae and tarsi dark brown or blackish.

Wings pale grey, base and costal cell yellowish. Stigma dark brown but ill defined, and a brownish suffusion, irregular in extent below the stigma extending around the discal cell; also in less distinct manner, at the base of both basal cells, at the origin of the 2nd longitudinal vein and over the posterior cross-vein, and here and there over some of the veins. Halteres brownish yellow.

Described from a single example in excellent condition (except for the loss of the apical half of the abdomen). Taken by Mr. Felder in 1861 in Ceylon, marked "Alte Sammlung."

Type in Vienna Museum.

N.B.—The end of the abdomen being broken off, the sex of the specimen is indeterminable. The species is a very conspicuous one and quite unlike, in the antennae, any other that I have seen or read of. The abdomen, so far as the middle, shows no trace of any increase in width. It may not be a *Pselliophora*, but the antennae cannot by any stretch of imagination be associated with *Tipula*, yet the flagellum is distinctly verticillate, an essentially tipuline character.

Pselliophora immaculipennis, mihi, sp. nov.

♀. Assam. Long. 12 mm.

Head bright shining orange-yellow, with scattered hairs; a frontal spot, almost bisected in the middle (just above the antennae), shining light yellow-brown, extending from eye to eye. Eyes small, black and placed well forward so that the back of the head is very wide, and joins the equally broad vertex which is orange-yellow. Face rather considerably covered with long yellow hair, antennae concolorous, covered with microscopically silver-grey dust: the 1st joint long, cylindrical, 2nd short, bead-like, 3rd and rest cylindrical, 3rd as long as 1st, remainder gradually shortening; the last three very short and close together, the 13th style-like. Palpi orange-yellow, tip black.

Thorax concolorous, with irregularly scattered hairs, shining, bare. The prothorax is reduced to a small circular thick disc, bright yellow; humeri brown. Mesothorax with three wide,

shining light brown stripes, tapering in width behind, the 1st central and attaining the anterior margin, the stripe on each side reaching the shoulders and terminating above the mesopleurae. Behind the middle transverse suture the dorsum widens out until the posterior corners form sharp angles. This posterior portion of the thoracic dorsum bears a wide brown stripe on each side, divided by a small longitudinal suture; the stripes beginning behind the ends of the two dorsal side stripes which are in front, and extending backwards to the small scutellum which is all yellow. Metanotum of moderate size, all yellow. Sides of thorax yellow, with a shining, very dark brown triangle just below the root of the wing, and a downward brown streak behind and rather above it. Under side of thorax dark brown; a prominent, small, circular, pale yellow callosity in front of the hind coxae.

Abdomen concolorous with irregularly scattered hairs. Bases of all the segments brown, this colour apparently varying in breadth; 2nd segment much contracted; 3rd and 4th suddenly widened; the rest tapering to a point. Ovipositor short, reddish brown, shining. Belly yellowish, with traces of some transverse bands, corresponding to those on the upper side.

Legs yellowish tawny; coxae brownish yellow, tarsi blackish, bare of long hairs or spines, with microscopically yellow pubescence on the femora, which is much mixed with black pubescence on the tibiae.

Wings yellowish, unmarked, stigma yellowish, indistinct, small; veins and halteres brown.

Described from one ♀ from Sylhet in the Indian Museum collection in perfect condition.

Pselliophora terminalis, mihi, sp. nov.

♀. Tonkin. Long. 30 mm. + ovipositor 3-4 mm.

Head bright chrome-yellow, vertex dark brown, the colour extending forward in the centre almost to the root of the antennae. Proboscis a little brown on upper side, labella dark brown, nearly black; palpi brownish yellow, black towards tips. Antennae bright yellow, scape normally shaped, 1st joint large, wider at tip, 2nd joint small, subannular: 1st flagellar joint $1\frac{1}{2}$ times the length of the next joint, deeply cut away below in the middle, as are the rest of the flagellar joints, but in the 1st joint the basal and apical halves are about equally deep, whereas in the remaining joints (except the apical one) the basal part is much deeper than the apical: apical joint elongate, narrow, constricted in middle below.

Thorax bright chrome-yellow. Dorsum with three rather dark brown stripes, the median one of which reaches the anterior border, being divided for the greater part of its length: the outer stripes foreshortened, barely interrupted at suture, behind which they take the form of a circular and an oval spot. On the rest of the thorax there are slight brownish traces here and there.

Scutellum yellow, with brownish dorsum, deeper on posterior margin; metanotum yellow, with traces of two brownish spots.

Abdomen brownish yellow; a well-defined dark brown band with parallel sides on posterior margins of 3rd, 4th, 5th and 6th segments; less distinct on 2nd, 1st segment unmarked, 7th and 8th much narrowed and elongate, reddish brown, blackish on dorsum, 8th with distinct black band on posterior margin. Ovipositor rather small, reddish yellow, the valves shining reddish brown, the lower pair much the shorter. Belly a lighter replica of dorsum.

Legs.—(Only one femur, tibia and metatarsus of fore leg, and femur and tibia of one hind leg remaining.) The femora are brownish yellow, rather broadly dark blackish brown at tips; tibiae dark brown, metatarsus nearly black.

Wings yellow; brown for a little distance at base of 1st basal cell; a small brown spot over origin of 2nd vein. The stigma is dark brown, the suffusion carried down the veins to the discal cell, passing through it and along the posterior cross-vein and the ultimate section of the 5th longitudinal vein. Tip of wing a little brown along the costa. Halteres brownish yellow.

Described from one ♀ in the Vienna Museum, in good condition except for the damaged legs. Taken by Fruhstorfer in Tonkin, Montes Mavson (2—3,000 ft.), in April or May.

Pselliophora, sp.

A male specimen of *Pselliophora* in the Vienna Museum, is distinguished by the very long antennae, which if bent back would reach the tip of the abdomen (exclusive of the genitalia). The wings being broken off, it is impossible to describe it, but it appears to represent an unknown species.

It is mainly yellow, except some black at the tip of the abdomen and on part of the genitalia. The legs are black, except the basal three-fourths of the femora, which are yellow, and there is the usual white ring (common to all the species in one section of the genus) beyond the base of all the tibiae. The fragments of wings that still remain are yellowish at the base, and blackish beyond.

Long. 12 mm. The specimen comes from Samanga, Celebes, taken November 1895 by Fruhstorfer.

PRIONOTA, Wulp.

nigriceps, Wulp, ♂ ♀. A single specimen of each sex from Java. The ♂ is 16 mm. long, the ♀ larger.

N.B.—A large species of *Tipula* in the Indian Museum has a considerable resemblance to this genus, and will be described by me later.

Section II. TIPULINI.

TIPULA, L.

LIST OF, AND NOTES ON, DESCRIBED SPECIES.

pedata, W., ♀. Widely distributed throughout the East; Van der Wulp records it from Java, Sumatra, Borneo and the Philippines; the Vienna and Indian Museums have it from Assam and Ceylon, from which latter locality I have seen several specimens if I have correctly identified the species. It appears to be variable unless several closely allied species exist.

Type in Westermann's collection, in the Vienna Museum. Meijere records the species being bred from a pupa by Dr. Van Leeuwen in Java.

praepotens, W., ♂ ♀. East Indies. Recorded also from Japan, but I do not know if the identity is established. Type in the Leyden Museum, where in the old collection are three specimens, of which one is a ♂, one a ♀, the third being damaged. Wiedemann quotes no sex.

monochroa, W., ♂ ♀. Java. Type in Leyden Museum. Wiedemann only mentions the ♀ but Dr. Jentink informs me there are two ♂♂ and two ♀♀ in the old collection; an additional specimen in bad condition from Sumatra, identified by Van der Wulp, and another specimen from Celebes. Meijere records a ♀ from Java and notes the affinity of the species with *T. pilosula*, Wulp.

umbrina, W., ♂ ♀. East Indies. Type and three other examples in the "old collection" of the Leyden Museum, with a ♂ and ♀ from Gorontalo (Celebes), two ♂♂ from Obi Island, all identified by Van der Wulp. I accept this latter dipterologist's synonymy of *castanea*, Meq., and *incongruens*, Wlk. It is not rare in Java.

venusta, Wlk. Described from Sylhet, the type, of which no sex was announced, being then in the British Museum, but it is now no longer to be found there. There is a closely allied species found in India, which at first I mistook for Walker's *venusta*. This will be described later on in my volume for the "Fauna" series.

walkeri, mihi, nom. nov.
(*fulvipennis*, Wlk.)

This species of Walker's has to be renamed, *fulvipennis* being preoccupied by Degeer in 1776 for a European species. Walker's type is in the British Museum, valueless for comparison; its sex is not recognisable, and no other specimen appears to be known. Its sex was not stated.

reposita, Wlk., ♂ ♀. Both sexes were described by Walker from Nepal; of the types, in the British Museum, the ♂ is in sufficiently good condition to be useful but the ♀ is reduced almost to a fragment.

melanomera, Wlk., ♂. The type ♂ in the British Museum is in good condition, two other ♂♂ from the same locality (Nepal) being present in the national collection.

nova, Wlk., ♀. Hongkong. I retain this species in the list though I think both Hongkong and Shanghai more fitted to rank in the Palaearctic Region than the Oriental. The type, in the British Museum, is useless for comparison.

vicaria, Wlk., ♂. "India" is sent me as the locality after an examination of the type by Mr. Hill, Walker's quotation being East India. The name *vicaria* is preoccupied by Walker himself in 1848 for a South African species, but as the type (British Museum) is in too bad condition for identification and no other specimen is (apparently) known, I refrain from setting up a new name, as it might be as well to let the species sink, since it would be extremely difficult if not impossible to satisfactorily set up a new type from the author's description.

vilis, Wlk., ♂. Sarawak. Type in British Museum, but useless for comparison, no other specimens being present, but Meijere describes the ♀ from Java. (Tijd. v. Ent., liv, 69.)

schummeli, mihi, nom. nov. Amboina. No sex stated.

(*longicornis*, Dol., *preocc.*)

The name of this species has to be changed, as Schummel used it in 1833 for a European species. It has moreover been used several times since for species which have not been renamed.

infidens, Wlk., ♂. Ceram, Celebes. The type (British Museum) is a unique specimen from Ceram in fairly good condition, and Mr. Hill informs me it is a ♂ and not a ♀ as quoted by Walker. Van der Wulp adds Celebes as a locality.

inordinans, Wlk., ♂. Celebes (Makessur). Type in British Museum in good condition; the only specimen.

fumifinis, Wlk., ♂. Amboina. Van der Wulp spells this erroneously, *fumifines*. Walker thought his species identical with *longicornis*, Dol., but Van der Wulp considers them distinct. The type, a unique specimen, in the British Museum in good condition.

pallida, Wlk., ♂. Papua. Type in the British Museum in good condition, a unique specimen.

punctifrons, Rond., ♀. Sarawak, Borneo. Type not traceable.

serrata, Wulp, ♂ ♀. Serahan. In addition to the type ♂ in the Leyden Museum from Serahan, there is also a ♀ from Sumatra.

pilosula, Wulp, ♂. Java. The described ♂ is in the Leyden Museum, in fair condition. Meijere records a ♂ from Gunung Kenepai, Borneo.

leucopyga, Wulp, ♂ ♀. Java. The described type ♂ and ♀ are still in the Leyden Museum.

* * *

Since Van der Wulp's catalogue, five new species have been described by Meijere, the types being in the Amsterdam Museum. These are—

thibetana, Meij., ♂. Bijd. tot. de Dierk., xvii, 89, pl. viii, 2, 3, wing (1904), Tibet. Technically this should not be included in Oriental lists but it may quite possibly occur at places in the Himalayas, and it is well for the student to be aware of the species, which is described from Tatsienlou in Tibet.

T. cinctipes ♂, *gadehana* ♀, *cinereifrons* ♂ and *inconspicua* ♂ are the other species described by Meijere,¹ all from Java.

It will be seen that, so far as I have been able to ascertain, all the species of *Tipula* given in Van der Wulp's catalogue are good ones. I refrain from compiling them in tabular form, until fuller information is obtainable respecting many of them. A large number of undescribed species have come before me and some of these are herein characterized.

Tipula majestica, mihi, sp. nov.

♂ ♀. Darjiling district. Long. 33 mm. + proboscis 3 mm. and ovipositor 3 mm.

Head.—Back of head light brownish grey, with a very narrow median dark line. Frons and proboscis reddish brown, more greyish above in ♀. Palpi blackish, antennal scape and basal joints of flagellum yellowish red, rest of flagellum black; first three joints of flagellum elongated, remainder much shorter and slightly elongated below in their centres.

Thorax.—Sides of thorax and ground colour of dorsum, rich deep yellow ochre, bare. Dorsum with a pair of median dark grey contiguous stripes forming the usual centre stripe, with a shorter outer stripe on each side, almost contiguous. The whole of the dorsum of the post-sutural callosity occupied by a concolorous spot; the dorsum of the thorax just above the centre of the suture showing the bright yellow ground colour. Scutellum and metanotum dark grey, a narrow dark brown stripe joining roots of wings to the scutellum. Pleuræ gold-yellow, with shining yellow reflections in certain lights.

Abdomen dark brown, microscopically pubescent; posterior margins of segments very slightly darker. In the ♀ there is a tendency to a narrow irregular dorsal stripe, formed by the rather paler centres of the segments. Belly dark blackish grey.

Genitalia in ♂ consisting of a comparatively small dorsal plate bilobed almost to its base, narrower behind, with yellow hair; a pair of claspers with a very large approximately conical black-haired basal joint and a much smaller scoop-shaped second joint, with yellowish hairs. The eighth ventral segment has its edge emarginate in the middle, bent in a sharp curve and clothed in

¹ Tijd. v. Ent., liv, 64, et seq. (1911).

that part with bright golden yellow hair. Intermediate organs invisible. Ovipositor in ♀ shining brown, with reddish tips.

Legs.—Coxae gold-yellow, rather shining, with a little hair; femora and tibiae brownish yellow, tarsi rather darker; tips of femora with a rather narrow black ring.

Wings brownish yellow, veins a little deeper coloured. The centres of most of the cells on the posterior half of the wing rather clearer and there is an indistinct transverse clear streak just before the hardly visible stigma. Halteres blackish.

Described from a ♂ (type) and two ♀♀ all from Darjiling, taken by Mr. F. M. Howlett, 3—9-vi-09, and a ♀ (type) from Kurseong, 24-vi-10 [*Annandale*].

Type ♂ in the Pusa collection, type ♀ in the Indian Museum.

Tipula fulvolateralis, mihi, sp. nov.

♂. Himalayas. Long. 31 mm. from tip of nose to tip of genital organs.

Head.—Vertex grey; frons one-fourth the width of the head, yellow, with a little grey. Proboscis yellowish, dark brown at tip and on under side, also the labella and the palpi. Antennae yellow, brown towards the tips.

Thorax.—Dorsum brownish grey, forming the usual three dorsal stripes which are nearly contiguous, the middle one reaching the anterior margin and being just perceptibly divided in front, the outer ones short, not reaching the shoulders. Dorsum behind suture, scutellum and metanotum brownish grey.

Sides of thorax rather bright yellowish, the colour extending round the front below the shoulders; a dark brown thin line on each side, below the yellow portion, separating it from the lower part which is almost livid in the type but unicolorous yellow in the second specimen.

Abdomen chestnut-brown. Under side light yellowish grey on basal half, genitalia brownish yellow, pubescent, complex. A dorsal small elongate curved plate, bilobed on posterior half. A pair of large claspers, two-jointed, the 2nd joint rather shorter, scoop-shaped. An internal pair of organs, sub-globular, with narrow stems; a ventral curved plate with a small semicircular piece cut away in the centre, closely pubescent around the emargination with golden yellow hairs.

Legs brownish yellow, coxae livid, with a few whitish hairs, tips of femora with a rather narrow black ring.

Wings moderately dark grey, costal cell brownish yellow (in one specimen with a number of fine but distinct upright lines); stigma hardly distinct from the colour of the costal cell. A small, nearly hyaline spot just above the discal cell, of which the distal side is nearly double the length of the proximal. Posterior cross-vein narrowly but distinctly suffused near its junction with the 5th vein. Petiole of 2nd posterior cell very short. Halteres blackish.

Described from four ♂♂. Type from Bhim Tal (4,500 ft.), Kumaon District, 19—22-ix-06 [*Anmandale*], one from Dhikala, Garhwal District, base of Himalayas, 11-iii-10, and two from Sikkim, the latter in the Vienna Museum.

GEOGRAPHICAL DISTRIBUTION.—Western Himalayas.

Type in Indian Museum (also the Dhikala specimen).

***Tipula fumifasciata*, mihi, sp. nov.**

♂ ♀. Assam, China. Long. 15 mm.

Head almost wholly yellowish grey. Antennae: scape, 1st joint slightly contracted in middle, with a few hairs, 2nd very short; flagellum yellow, with microscopic whitish pubescence, and a verticil of 4 or 5 black bristly hairs at base of each joint.

Proboscis and palpi yellow, both with short stiff black hairs.

Thorax pale yellowish grey. The three normal dorsal stripes pale brownish grey, the median one abbreviated in front, and continued to the anterior margin only in the form of three very narrow lines. Sides of thorax pale yellowish grey, rather darker behind, with a slight brownish tinge behind the wings. Scutellum and metanotum very pale yellowish grey, almost with a greenish tinge.

Abdomen light brown, with microscopic golden yellow hairs, extreme bases of segments very narrowly black, posterior margins of segments narrowly pale yellowish.

Genital organs concolorous, concealed, but large and apparently complex.

Legs yellowish, tips of femora and tibiae a little brownish; tarsi dark brown or blackish.

Wings pale brown, a little darker on anterior half. Distal third of both basal cells nearly clear, the hyaline part continued through the discal and 1st posterior cells to the wing margin. A narrow, irregular clear streak transversely across the marginal cell, just beyond the barely obvious, small blackish stigma, which clear streak joins the clear part of the 1st basal cell. Veins brown, 3rd and 5th longitudinal veins, and the cross-vein connecting the 5th with the discal cell, deeply but narrowly dark brown suffused. Pedicle of fork of upper branch of 4th vein nearly as long as discal cell. Halteres brown.

Described from two ♂♂ and one ♀ (types) in the Indian Museum collection from Ukhral, Manipur State (6,400 ft.), taken by the Rev. W. Pettigrew in August 1908; also from a cotype ♀ from Central China in the Vienna Museum.

***Tipula fumipennis*, mihi, sp. nov.**

♀. Darjiling. Long. 20 mm. + proboscis 2 mm. and ovipositor 2 mm.

Head mainly dark brown, a little yellow around the base of the proboscis; dark grey on back of head, except a broad median

brown part extending over the frons to the antennae; which latter are yellowish brown; scape paler. Palpi dark brown.

Thorax.—Dorsum dark brown, almost bare, and with the three usual stripes black; the middle one divided down its centre by a narrow pale line. The outer spots normal. Behind the suture, a small yellowish spot on the base of each post-sutural elevation, the dorsum of which is darker brown. The sides of the thorax immediately below the dorsum are occupied by a distinct though rather narrow pale yellowish stripe: below this the pleurae are lighter, shining brown, practically bare. Prothorax rather prominently divided from mesothorax by a deep suture. Scutellum and metanotum brownish yellow, with lighter reflections and some pale hair.

Abdomen uniformly shining dark brown, bare. Belly lighter, with a little light hair. Ovipositor shining dark brown.

Legs.—Coxae light yellowish brown, with pale yellow hairs: femora and tibiae yellowish; femora with a rather broad black ring at tip.

Wings uniformly blackish brown; posterior part slightly lighter, veins blackish. Posterior cross-vein somewhat thickened and infuscated, a character in which the veins in the immediate vicinity appear inclined to partake.

Discal cell distinctly longer than the petiole of the 2nd posterior cell, this petiole rather more than half the length of the terminal veinlets. Halteres blackish.

Described from one ♀ in the Pusa collection, taken by Mr. F. M. Howlett at Darjiling, 3—9-vi-09. I have a damaged specimen from Mussoorie that I captured there in June 1909.

Tipula pluto, mihi, sp. nov.

♀. Tonkin. Long. 32 mm. + 4 mm. proboscis and 7 mm. ovipositor.

Head wholly dull black, as are also the antennae and other organs.

Thorax wholly dull black, unmarked, a very little whitish hair about the posterior margins, scutellum and metanotum.

Abdomen.—First segment brownish yellow, with a blackish mark at the base; 2nd bright yellow with a broad black posterior margin; remainder of segments dull black, with a basal, somewhat narrow, dull leaden grey band on each; last segment wholly black. On the under side the ventral plates almost wholly yellow, narrowly brownish on hind margin. Ovipositor long, shining black; from between the two pairs of valves protrude two narrow, pale, tentacle-like pubescent filaments.

Legs wholly dull black; hind metatarsus as long as the tibia.

Wings blackish grey, veins pale brownish; petiole of 2nd posterior cell only one-fourth the length of the cell. Halteres black, stems very slender.

Described from one ♀ in the Vienna Museum, from Montes Mavson (2—3,000 ft.), taken in April or May by Fruhstorfer.

Tipula cinerea, mihi, sp. nov.

♀. Lombok. Long. 27 mm., including proboscis and ovipositor.

Head dark cinereous; basal joints of antennae a little yellowish; flagellum (mostly broken off) dark brown; palpi dark brown.

Thorax moderately light brownish grey, with the usual three stripes, the median one divided on its anterior half, the outer stripes continued in the usual form of a large approximately oval spot on each side behind the suture. Scutellum and metanotum rather lighter in shade. Sides of thorax light grey cinereous, almost ash-grey, with a median horizontal narrow brown line.

Abdomen dark blackish grey. Ovipositor brownish yellow, shining, of moderate length. Belly whitish at the base.

Legs wholly light brown-yellow, except for a rather broad apical black ring on all the femora.

Wings wholly pale grey; costal cell yellowish; pedicle of 2nd posterior cell half the length of the cell. Halteres blackish.

Described from a ♀ in good condition from Lombok (2,000 ft.), May or June 1896 [*Fruhstorfer*].

Type in the Vienna Museum.

Tipula flava, mihi, sp. nov.

♂. Sikkim. Long. 30 mm. including proboscis.

The whole body deep orange-yellow. Palpi, labella and antennae a little darker.

Thorax unstriped. Genitalia consisting of a bilobed, oblong dorsal plate, a pair of claspers, of which the first joint is very large, obtusely triangular; the second joint elongate-triangular; the whole organ concolorous.

Legs concolorous, femora tips minutely black; tarsi tips a little darker.

Wings pale grey, veins brownish yellow. Halteres brownish yellow.

Described from a single ♂ taken by Mr. Fruhstorfer in Sikkim in March or April.

Type in the Vienna Museum.

Tipula himalayensis, mihi, sp. nov.

♂ ♀. Himalayas. Long. to tip of nasus ♂, 11—14 mm.; ♀, 11—20 mm. + 3 mm. ovipositor.

Head yellowish, yellowish grey, occasionally with a slight greenish cinereous tinge. A narrow fuscous stripe from behind the head, passing over the vertex, descending to just above the

antennae, where it forms an elongated spot. Antennal scape yellow; flagellum normally dark brownish black, with one or two hairs on each side at the base of each joint; each joint being slightly notched on the upper side just beyond the base and fairly long. In some specimens the flagellar joints are shorter, and when this is the case they are generally mainly yellow with a narrow black base. Occasional intermediate forms, both in the matter of length of the joint and colour, prove that the differences are not specific. Proboscis brownish; palpi more or less brown, first three joints subequal in length, 3rd the shortest; 2nd and 3rd stouter, 4th thin, twice length of 2nd; all the joints moderately pubescent. Eyes black; frons at narrowest part barely one-third of head. Back of head concolorous, a few hairs, especially just behind, but not contiguous to the eyes, also on lower part.

Thorax mainly yellowish grey, varying to ash-grey, often with a slight greenish tinge. Dorsum with three stripes on anterior part, the middle one divided behind, reaching to the suture, and with a darker middle line in front; the outer stripes short, forming elongate spots, all three stripes greenish grey in colour. Each post-humeral callosity bears three similarly coloured spots, an inner oval one, more or less in a straight line with the outer stripe in front of the suture; and two smaller outer ones just above the base of the wings; all the three spots being in some specimens confluent. Shoulders more or less lighter grey, sutural emargination yellowish or greyish. Scutellum yellowish or yellowish grey, with a more or less distinct narrow median line. Metanotum yellowish grey, hinder half more ash-grey, an indistinct median line. Sides of the thorax usually concolorous, but always more yellowish than the dorsum.

Abdomen variable. Generally in the ♂ the first five segments yellowish or yellowish brown, the remainder dull black, but the latter colour sometimes encroaches on the major portion of the abdomen, leaving only one or two basal segments yellow. In the ♀ yellowish or brownish, with three dorsal black lines, but the black colour is even more irregular in its extent in this sex than in the ♂, often covering nearly all the dorsum. In both sexes a narrow black line on each side of the abdomen, which is sometimes lost in the nearly wholly black abdomen in certain specimens.

Male genitalia moderately large, concolorous, composed of an outer pair of firm conical claspers, the basal joint cut away somewhat on the outer side, the second joint comparatively large, with pointed tip; a dorsal narrow plate with yellow hair on its posterior margin. An inner pair of spoon-shaped organs bearing yellow hair.

Ovipositor in ♀ very long (3 mm.), consisting of a long basal cylindrical piece, hard, shining blackish brown, with at each side of it a grey plate with rounded edges, protruding from the last abdominal segment; these plates do not meet above or below. To the end of the basal piece is affixed a pair of long, pointed, slightly arcuated lateral valves, distinctly serrate on the under

side. The lower pair of valves is extremely short, and very liable to be overlooked unless closely searched for.

Legs black. Coxae, knees, femora at the base and a broad ring near the tip pale yellow.

Wings yellowish grey, veins brown, costal cell more or less yellowish. Clearer spots occur in the wings, generally towards the tip of the costal cell, at the base of and in the middle of the subcostal, surrounded by the stigma; a streak just beyond the stigma, extending hindwards; a roundish spot on the posterior part of the distal half of the second basal cell, and sometimes small ones at the end of the 6th and 7th longitudinal veins, all these pale spots being more or less indistinct and ill defined, the wing occasionally being nearly wholly clear, and having no yellow in it except in the neighbourhood of the costa. Stigma always brownish, of varying intensity. Halteres yellow, knobs black.

Described from a good series of both sexes in good condition taken by me at Darjiling, 22-ix-08, to 1-x-08, in bushes on the hillside and attracted by the lamps in houses during the evenings. Frequently seen *in cop*. I also took several in the same locality from 10 to 20-x-05, and again from 23 to 29-v-10. The type ♂ and ♀ are in the Indian Museum; cotypes of both sexes are also both in that collection and my own. The Museum series comprises specimens from Bhim Tal (4,500 ft.), 19—22-ix-08, and Naini Tal (6,400 ft.), both taken by Dr. Annandale; Darjiling, 20-x-05; 22-ix-08 to 1-x-08; and 22—29-v-10, all taken by me.

N.B.—The species is variable but within certain limits and can be easily recognised by the pale yellow wide ring on all the femora about as far from the tip as the width of the ring, a peculiarity I know of in no other Oriental species with marbled wings except *elegans*. I describe this species rather fully because it seems the type of a small set of very closely-allied but distinct species frequenting the Himalayas. Three or four of these are present in the Indian Museum. Possibly *himalayensis* or some of the allied species referred to may prove identical with Palaearctic forms.

***Tipula robusta*, mihi, sp. nov.**

♂. Western Himalayas. Total length 20 mm.

Head dark grey: frons one-fifth width of head. Antennae brownish yellow, base of joints very narrowly black. Proboscis and palpi dark brown, pubescent.

Thorax.—Dorsum practically all blackish brown, with the exception of the suture, hind margins of the post-sutural callosities and a broad side and hind marginal border to the metanotum, all of which parts are reddish yellow. Metanotum with some short golden yellow hairs towards its sides, its dorsum dark grey. The median dorsal thoracic stripe attains the anterior margin and is slightly darkened on its edges. The prothorax is very distinct, brown, somewhat divided by a depression from the mesothorax. Neck yellow. Sides of thorax light orange-yellow.

Abdomen brown, 1st segment reddish yellow; 2nd reddish yellow on upper side, last segments blackish. Belly lighter brown, yellowish at base, tip blackish. Genital organs mainly dark brown, large and complex, but considerably concealed between the two large side plates, apparently consisting of a small upper dark brown pubescent plate; a pair of pale yellow flat, pointed organs; the usual pair of large claspers of which each bears a brush-like appendage; and there are apparently intermediate organs also.

Legs.—Coxae yellow, with a little pale gold hair, femora light brownish yellow, tips rather broadly blackish. Tibiae brownish yellow with blackish tips; tarsi yellowish brown, very long; hind pair nearly twice as long as the tibiae.

Wings pale yellowish grey, with darker brownish yellow parts, such as the costal cell, the major part of the 1st basal cell, a large area near the distal part of 2nd basal cell, a squarish spot in the middle of the 6th posterior cell, the whole of the two submarginal cells, and the base of the 1st posterior cell. Stigma yellowish brown, well defined. Veins dark brown, fifth with a tendency to a narrow suffusion. Halteres brownish yellow.

Described from one ♂ in my collection from Mussoorie, taken by me 22-vi-05.

***Tipula elegans*, mihi, sp. nov.**

♀. Western Himalayas. Full length about 20 mm.

Head yellowish grey, more yellow on back of head, from which a narrow, not very distinct fuscous stripe runs over the vertex, but terminates before reaching the base of the antennae. Nasus rather produced, pale yellow, with a pinkish tinge, and some yellow hairs at tip, pointing forwards. Frons one-fourth width of head; eyes black; palpi dark brown, pubescent. Antennae: scape yellow; flagellum dark brown, the base of each joint narrowly black ringed, and with one or two hairs each side, the joints having a microscopic pale pubescence which gives a grey shimmer when seen in certain directions. Proboscis dark brown, tip black.

Thorax.—Dorsum brownish grey, with the three usual stripes shortened and confluent, thus forming a central spot of dark blackish brown colour, which in certain lights has a reddish tinge. Two almost contiguous broad grey stripes (each darkened on its inner side) proceed from the front of the dorsal spot to the anterior border of the thorax.

Two dark reddish brown spots on each side, behind the suture, the upper one circular, the hinder one oval: the hinder half of this latter one, seen from behind, bears a greyish shimmer. A small yellowish cavity just below the shoulders. Prothorax more or less ash-grey, with slightly darker markings and a small brown streak on its upper part.

Scutellum and metanotum very pale brown; posterior half of latter with ash grey reflections seen from behind, with a narrow, dark median line, as has also the scutellum. The scaly ridge in

front of the base of the wings, yellow. Sides of thorax wholly pale greenish grey, with a whitish grey shimmer in certain lights; the elongated metapleura whitish shimmered.

Abdomen tawny yellow, with a median dark brown shining stripe, and a narrow side stripe, below which the extreme *edges* of the 2nd to the 7th segments are distinctly whitish on the posterior part.

Belly pale yellow, with indistinct median dark line. Ovipositor 3 mm. long; the first part shining black, cylindrical, with a whitish tip, the second consisting of two elongated red-brown sheaths. A reddish yellow ventral plate and an intermediate grey part apparently completes the genital apparatus.

Legs almost exactly as in *himalayensis*, but more brown than black; the tarsi not much longer than the tibiae.

Wings.—A general resemblance to both *himalayensis* and *robusta* in appearance. Costal cell yellow, with only a single small clear spot near tip. A wide, but pale brown band begins on the costa near the base but only reaches the fifth longitudinal vein, and there is an irregular row of nearly clear spots from the base of the 1st basal cell, hindwards to posterior margin of wing, one spot in each cell. The darker parts of the wing are slightly darker than in *robusta*, and the clear spots have a tendency to be still clearer, larger, and possibly more numerous. Halteres black, apical part of club pale.

Described from a single perfect ♀ in my own collection taken by me at Mussoorie, 18-vi-05.

Tipula interrupta, mihi, sp. nov.

♀. Darjiling. Long. 25 mm. including proboscis + 2 mm. ovipositor.

Head.—Frons dark brownish grey, one-fourth width of head. Proboscis dark brown; palpi black. Antennae yellowish, last joints blackish, with a few greyish reflections.

Thorax.—Dorsum, scutellum and metanotum dark yellowish grey, with a little microscopic pubescence. The usual three dorsal stripes barely darker than ground colour. Sides pale yellowish, bare; a little more orange immediately below the dorsum, from shoulder to wing base.

Prothorax prominent, separated by a deep suture, brownish yellow.

Abdomen blackish, with microscopic pale yellowish and dark brown close pubescence; bases of segments with a fairly wide, bare, shining blackish band, not very obvious but distinctly present. Ovipositor short, shining dark reddish brown.

Legs brownish yellow; coxae with a few soft pale hairs; femora and tibiae narrowly black at tips.

Wings pale yellowish; costal cell a little darker; veins blackish. The 5th longitudinal vein infuscated towards tip and at its juncture with the cross-vein. Stigma yellowish brown, occupying

nearly half the marginal cell. A clear streak crosses the marginal cell, apparently cutting away the stigma abruptly, and crosses the proximal end of the discal cell, which latter is pentagonal. Halteres blackish.

Described from one ♀ from Darjiling in the Pusa collection taken by Mr. F. M. Howlett, 3—9-vi-09.

N.B.—Very near *fumipennis*, but differing by the absence of the distinct pale side stripe on the thorax just below the dorsum; by the lighter colour of the head and thorax; by the narrow (not wide) black tips to the femora; the yellowish instead of blackish brown wing; the absence of red on the dorsum of the abdomen, and by the pentagonal shape of the discal cell.

***Tipula nigroapicalis*, mihi, sp. nov.**

♂ ♀. Darjiling. Full length ♂ 15 mm., ♀ 16 mm. + 2 mm. ovipositor.

Head cinereous grey, frons forming one-third the width of the head, with a not very distinct fuscous stripe, continued behind the vertex. Proboscis yellowish brown, with blackish tip; palpi blackish brown, both organs pubescent. Antennal scape yellow, 1st joint of flagellum yellow, the remaining joints yellow, narrowly black at their bases, where there is a verticil of four hairs on each. Under side of head more yellowish.

Thorax cinereous grey, with the usual three dorsal stripes olive or greenish brown, the middle one reaching the anterior margin, the outer stripes in the form of elongated oval spots, almost contiguous with the median stripe. Two post-sutural concolorous spots on each side in the shape of two triangles placed almost base to base. Scutellum and metanotum yellowish, with yellowish grey reflections if viewed from certain directions. Sides of thorax yellowish; below the level of the wings, dark grey.

Abdomen yellowish, with some soft yellow hairs, a dorsal and a lateral blackish stripe, last two segments black. In the ♀ the last segment greyish, penultimate segment grey on under side.

Genitals very complex in ♂, but considerably withdrawn within the two side plates, which themselves appear to be furnished with a thick hook-like appendage each. In addition there are at least two distinct pairs of organs, the larger pair are the usual claspers, conical, black; the other pair are yellowish, flatter and with yellow hairs, a black edge and a strong brown inner tooth. A lower additional pair of black hook-like organs are visible near the ventral plate, and there appear to be other organs not easily discernible in the present specimen.

Ovipositor shining black, with shining reddish brown valves.

Legs.—Coxae and femora yellowish; latter with a blackish ring at the tip; tibiae and tarsi brownish or brownish yellow, tarsi darker towards the tips.

Wings yellowish, a little iridescent in the ♂, rather paler at base of submarginal and 1st posterior cells, also in the middle of the 2nd basal cell, and irregularly, just before the stigma. Costal cell rather darker; stigma yellowish in ♂, brownish in ♀, distinct but ill defined. Veins dark brown. Halteres black.

Described from a type ♂ and ♀ taken 16—20-x-05, and two other ♀ ♀ 10—16-x-05, all taken by me at Darjiling.

GEOGRAPHICAL DISTRIBUTION.—Darjiling.

Type ♂ and ♀ in my own collection.

Tipula ornatithorax, mihi, sp. nov.

♂ ♀. East and West Himalayas and Sumatra (?). Long.
20 mm. + proboscis 2 mm., and ovipositor
4 mm.

Head tawny orange, tip of proboscis slightly darker; palpi and antennae dark brown, scape of latter orange-yellow.

Thorax uniformly tawny orange. On the dorsum are eight conspicuous bluish grey spots, narrowly edged with black, arranged as follows: two elongated nearly contiguous central ones (forming the usual median stripe) from the anterior margin nearly to the suture. On each side is a shorter one, nearly contiguous. A small circular one at the base of each wing with a nearly contiguous elongated one posterior to it.

Scutellum and metanotum in ♂ light orange-yellow, concolorous with posterior part of thorax; in ♀ scutellum slightly brownish and metanotum with two very indistinct brown streaks.

Abdomen in ♂ blackish, major portion of dorsal surface of basal two-thirds, tawny orange, with a small black spot towards each side of the base of the second segment.

In the ♀ blackish, yellowish above at base, the colour showing a tendency to form a short dorsal stripe.

Belly in ♂ tawny, except last three segments, blackish; in ♀ similar to upper side of ♀ but more yellowish, the posterior borders of the segments narrowly lined with yellow.

Genital organs in ♂ large and complex. A rather large squarish dorsal black plate, the posterior part bilobed, the hind margins with thick bright golden yellow hair. Two large blackish side plates, from within which protrude what are apparently the second joints of a pair of large claspers, conical and scoop-shaped, yellowish. An inner palp-like organ is attached to the second joint.

In the ♀ the ovipositor is also large, dark shining brown, with an upper longer and lower shorter pair of yellow lateral valves.

Legs yellowish brown, tarsi darker, extreme tips of femora and tibiae blackish.

Wings light grey, subcostal cell pale yellowish brown, ending in a pale similarly coloured stigma. Halteres blackish brown.

Described from a type ♂ in the Pusa collection from Darjiling, 3—9-vi-09 [Howlett], and type ♀ in the Indian Museum from Bhowali (Kumaon Dist., 5,700 ft.), July 1909, taken by Mr. A. D. Imms. A specimen (subsequently broken) was seen by me from Kurseong (Darjiling), 21—29-v-06, taken by Dr. Annandale, and the Vienna Museum possesses a ♀ from Sumatra which may be this species or a closely allied undescribed one. The markings on the thorax are less distinctly outlined, the whole insect paler, with clearer wings.

***Tipula sciariformis*, mihi, sp. nov.**

♀. Tonkin. Long. 8 mm.

Head including proboscis, palpi, antennae, wholly black; frons considerably arched.

Thorax wholly bright orange. *Abdomen* somewhat short, wholly black except the base of the first segment, which is orange. Ovipositor not visible.

Legs.—Coxae wholly, the femora narrowly at base, bright orange, remainder of legs black; *tarsi* very long, twice the length of the tibiae.

Wings dark grey, distinctly broader than usual; stigma dark brown, petiole of 2nd posterior cell about half the length of the cell; discal cell small, placed rather more anteriorly than usual. Halteres black.

Described from a single ♀ in good condition taken by Fruhstorfer at Tonkin.

Type in the Vienna Museum.

N.B.—A very peculiar-looking species, having the appearance of a very large *Sciara* with exceedingly long legs. Quite different in general appearance from any other species of the genus seen by me yet the venation and other generic characters are quite normal. Quite likely a new genus may be required for it.

***Tipula demarcata*, mihi, sp. nov.**

♀. Ceylon. Long. about 15 mm. + 1½ mm. ovipositor.

Head brownish yellow, frons dark grey or yellowish grey; about one-third of the head in width. In one specimen are two small black spots on each side, contiguous to the eye margins, and connected thereon by a narrow black line. Proboscis brownish yellow, palpi thin, brownish yellow, darker at tip; labella blackish. Antennal scape yellowish, 1st joint with some black hairs at the tip, making it appear darker in colour, 2nd scapal joint very short; flagellar joints much elongated, brownish yellow or grey, base of each joint very narrowly black, a verticil of four hairs at the base of each joint, two hairs on the upper and two on the lower side.

Thorax.—Dorsum mummy-brown (type) or yellowish; with a slight admixture of yellowish; a narrow dorsal median dark brown line from the anterior border to the suture. Scutellum

concolorous, metanotum pale semi-livid brownish yellow, moderately shining. Sides of thorax very pale pinkish or whitish grey, the colour extending across the neck; it is sharply separated from the dark dorsum, the line of demarcation running from just above the shoulders to below the root of the wing, thence posteriorly to the metanotum.

Abdomen.—Ground colour brownish yellow, but the greater part of each segment blackish, including the sides, except on the sides of the basal segments. In one specimen an indistinct pale yellowish narrow ring towards the base of many of the segments. A very narrow, more or less indistinct pale brownish yellow transverse line in front of the middle of each segment. Belly yellowish. Ovipositor brownish yellow, sometimes marked with black, normal, lower valves shorter than upper one.

Legs.—Coxae pale yellowish grey or pinkish grey, fore pair more yellowish, trochanters very pale yellow; remainder of legs dark brownish yellow, femora may be darker or rather lighter, broadly blackish at tips: tibiae and tarsi black.

Wings very pale yellowish grey, costal cell yellowish. Stigma brown, or the stigmatic region brown, merged proximally in the yellowish costal cell, the basal half of the marginal cell of the same colour as the rest of the wing. Discal cell pentagonal, rather small, the three upper sides forming a rectangle, the lower two sides forming a wide open "V": pedicle of upper branch of 4th longitudinal vein one-fourth as long as the veinlets. Halteres blackish.

Described from one ♀ from Kandy, May 1910, taken by Mr. Green, and another ♀ from Peradeniya, also from a cotype in the Vienna Museum from Peradeniya, taken 25-xii-01 by Dr. Uzel.

GEOGRAPHICAL DISTRIBUTION.—Ceylon.

Type in Indian Museum; cotype in Vienna Museum.

Tipula ochripes, mihi, sp. nov.

♂ ♀. Ceylon. Long. ♂ 18, ♀ 20—22 mm. + 2 mm. ovipositor.

Head yellowish, vertex a little brownish grey in the middle. Back of head similar. Proboscis blackish, robust and rather long; palpi blackish, with base and tips of first three joints more or less pale yellow. Antennae rather short, blackish or very dark brown: tip of the long scapal 1st joint and the whole of the very short 2nd joint, pale yellow; base of 1st flagellar joint, which is long and cylindrical, sometimes yellow also. The remaining joints setaceous, much narrower at the base and tip on the under side of each joint: very minutely pubescent and with a verticil of very short hairs in the middle of each joint.

Thorax.—Dorsum vandyke-brown, tinged with ochraceous here and there around the edges; with three narrow stripes (which sometimes appear as a pair of closely parallel lines, the stripe itself contained by them being practically concolorous with the

dorsum). Scutellum and metanotum similar. Sides of thorax, including the prothorax, yellowish; the colour rather distinctly marked off from the dorsum.

Abdomen blackish brown, with microscopic pale yellow hairs. Sides and belly yellowish grey dusted.

Legs.—Coxae yellowish; femora brownish yellow, tips broadly blackish; tibiae and tarsi to their tips rather bright yellowish, sometimes the tibiae a trifle more brownish yellow.

Wings pale grey, costal cell brownish, brownish yellow or yellowish. A very slight dark brown suffusion over the juncture of the posterior cross-vein with the 5th longitudinal vein. Stigma brownish, comparatively small; a pale streak obliterating the veins runs from in front of the stigma to beyond the discal cell, which it cuts just before or at the middle. Halteres pale, clubs darker.

Described from one type ♂ from Kandy, 20-v-10 [*Gravelly*], one other ♂ from Peradeniya, Ceylon, a type ♀ from Kandy, 31-x-09 [*Green*], and two other ♀♀ from Kandy, May 1907 [*Green*]: all these being in the Indian Museum. One ♂ in the Vienna Museum from Ceylon.

GEOGRAPHICAL DISTRIBUTION.—Ceylon.

Type ♂ and ♀ in the Indian Museum; cotype ♂ in Vienna Museum.

NOTES.—This species is near *T. vicaria*, Wlk. The discrepancies appear to be that in Walker's species the abdomen has two darker brown stripes, the femora have no black rings at their tips, and the tarsi are brown. *T. vicaria* is described from the "East Indies," not "East India" as given in Van der Wulp's catalogue. Walker's "incomplete whitish band by the stigma" I presume to represent my "obliterative streak."

Tipula divisa, mihi, sp. nov.

♂. Darjiling. Long. 11 mm.

Head.—Frons, at level of antennae, nearly one-third width of head, yellow, as is the face and proboscis, sides of latter brown, with some short black hairs. Palpi dark brown. Antennal scape yellow, second joint very short; flagellum black, each joint microscopically pubescent, rather elongated, and slightly swollen at base and towards tip, with a verticil of hairs just above the base. Last joint very minute. Back of head yellowish, with some hairs.

Thorax mainly bright chrome-yellow, bare. Dorsum with the three usual stripes, of which the median one attains the anterior margin and is divided by a narrow line, and is much less distinct than the outer shorter ones. These are somewhat velvet-brownish in colour. Post-sutural surfaces brownish yellow. A brown indistinct stripe from just below shoulders to the middle coxae. Scutellum, metanotum and sides of thorax uniformly chrome-yellow.

Abdomen shining brown, base yellowish; posterior margins of segments with a distinct, well-defined pale yellowish white

border which bears pale yellow hairs; the rest of the dorsal surface bears rather thick short dark brown hairs. Anal segments dark brown.

Genitalia dark brown, consisting of a strong upper piece, with two small pubescent appendages. Two side plates, meeting on under side enclose a complex pair of large claspers, which bear terminal pale yellow pubescent finger-like processes, and a strong pair each of bifid black claws pointing upwards. A pair of yellow-haired, comb-like processes are just below the large claspers.

Legs (hind pair missing).—Femora brown, paler at base and blackish towards tips. Knees a little pale. Tibiae and tarsi black.

Wings nearly clear; costal cell and stigma brownish. 5th longitudinal vein slightly darkened; an indistinct hyaline streak from just in front of the stigma to the discal cell.

Described from a single ♂ in the Pusa collection taken by Mr. Howlett at Darjiling, 3—9-vi-09.

Tipula gracilis, mihi, sp. nov.

♀. Darjiling. Long. 12 mm. + ovipositor.

Head.—Antennal scape yellow, with a few hairs on upper side, flagellum black, with microscopic grey pubescence and a verticil of hairs at base of each joint. Proboscis, palpi, frons and back of head, brownish yellow, with a few pale hairs on each side of the centre.

Thorax ferruginous brown; the three dorsal stripes and a large one on each post-sutural callosity, all united; the suture very narrowly pale. Scutellum, basal half yellowish, posterior half light ferruginous brown. Metanotum and sides of thorax yellowish brown with a little shining yellowish grey colour about the pleurae.

Abdomen dull black, with very short sparse grey hairs; yellowish at base, posterior border of segments whitish. Ovipositor shining black, terminal sheaths brownish yellow.

Legs brownish yellow, microscopically pubescent; coxae with a few short hairs; femora yellowish with black tips; tibiae and tarsi dark brown.

Wings yellowish; costal cell and stigma deep yellow, the latter distinct. An indistinct subhyaline streak from the inner side of the stigma to the basal half of the discal cell. Fifth longitudinal vein on distal part apparently double, forming a flattened triangle at its junction with the cross-vein connecting it with the fourth vein. Seventh vein very close to hind border of wing, and parallel to it. Halteres blackish.

Described from one specimen in my collection taken by me at Darjiling, 7-x-05.

PACHYRHINA, Macq.

LIST OF, AND NOTES ON, DESCRIBED SPECIES.

javana, W., ♂. Type in Westermann's collection in the Vienna Museum.

bombayensis, Macq., ♂ ♀. Bombay, Bengal, East Indies. Type in Bigot's collection. A good series of what can hardly fail to be this species is in the Pusa collection, from Pusa, where it occurs all the year round except (apparently) May, June and December. Meijere thinks this may be synonymous with the preceding species, and records it from Java. Three specimens are in the Indian Museum. The principal characters of the species appear to be the ferruginous colour, the fading away of the thoracic stripes in front, and the black triangular spot on each abdominal segment which often combine and form an interrupted or uninterrupted dorsal stripe.

N.B.—An undescribed species in the Indian Museum is very near, but I think quite distinct from, Macquart's species.

delta, Wlk., ♀. East Indies, according to my information, not East India as quoted by Van der Wulp. Type in British Museum with a second ♀.

tripartita, Wlk., ♂.

tenuis, Wlk., ♂.

colorata, Wlk., ♀.

Of these three species the types appear to be lost, Mr. Waterhouse informing me that they were evidently never in the British Museum. Of *colorata* Meijere records a ♀ from Dutch South Papua which agrees pretty well with Walker's description, to which he adds further notes.

doleschalli, Os. Sac., ♂ ♀. Java, Sumatra, Amboina, Ceylon.
fallax, Meij.

Of this species Van der Wulp gives two synonyms, *P. javensis*, Dol., of which the type is in the Vienna Museum, a ♂, in somewhat damaged condition, a certain amount of identification being possible; and *fasciata*, Macq. I have no means of testing these synonyms, the bare descriptions not being sufficient, but think that Osten Sacken must have accepted them as such, as he seems to have inspected all the described species of his time. The type of *doleschalli* is a ♀ from Buitenzorg, Java, in the Genoa Museum, where is also a specimen from Ajer, Mankior (Sumatra). Herr Meijere sinks his own *fallax* (Bijd. tot. de Dierk, xvii, 90) as a synonym of *doleschalli*, in his latest paper.¹ Three ♀ ♀ in the Indian Museum from Naini Tal are almost certainly this species. A description of this form is added further on.

familiaris, Os. Sac., ♂ ♀. Sumatra. Types in Genoa Museum (four specimens) from Mt. Singalang. Meijere in recording a ♀ from Java adds some notes to the description of the species.

melanura, Os. Sac., ♀. Papua. Type in Genoa Museum.

laconica, Os. Sac., ♀.

ortiva, Os. Sac., ♀. These two species, described from the Philippines, were in Osten Sacken's collection. Present location unknown to me.

¹ Tijd. v. Ent., liv (1900).

nigro-annulata, Wulp, ♂ ♀. Morotai. A type ♂ in good condition and two ♀ ♀ in fair condition determined by the author of the species are in the Leyden Museum.

quadrivittata, Wulp, ♂. Java. Type in Leyden Museum.

triplasia, Wulp, ♂ ♀. Java. Types in Leyden Museum.

immaculata,¹ Wulp, ♂. Java. Type in Leyden Museum.

Four species have been comparatively recently described by Meijere² from Java, the types being in the Amsterdam Museum. These are *dorsalis* ♀, *fallax* ♂ ♀, *scurroides* ♀, and *dimidiata* ♀, but *fallax*, as noted above, is now considered by its author synonymous with *doleschalli*, Os. Sac. He describes the ♂ of *scurroides* subsequently.³

N.B.—Although no species is definitely here sunk as a synonym, it is possible that further study of this genus may reduce their number. Many of the species are described from single specimens, and nearly all of them seem likely to prove variable; in fact since working at the Oriental Tipulidae *Pachyrhina* has always proved the most refractory genus of all.

***Pachyrhina doleschalli*, Os. Sac.**

Tipula javensis, Dol.

Pachyrhina fasciata, Macq.

I think there can be no doubt that three ♀ ♀ in the Indian Museum are this species and that it is very variable. Osten Sacken surmised as much, noting the variability of the abdominal marks and the spots on the pleurae; whilst various remarks in the three different descriptions of this species (Doleschall's, Macquart's and Osten Sacken's) support this view. The three examples before me are distinctly lemon-yellow, especially on the thorax, thus agreeing with Doleschall's "citri-no-flavo," Macquart's remark that the metathorax is all yellow is probably an error for metanotum, which in one of the three specimens is very conspicuously lemon-yellow, unmarked, in another bright lemon-yellow with an orange hind border, and in the third orange with a blackish hind, or rather lower margin. The scutellum also varies, being in two specimens shining black, in the third shining brownish yellow, sublucid. The abdominal marks are quite certainly very variable. The first example has the basal segment black, a broad black band on hind margins of 2nd and 3rd segment, a narrow one on the 4th and 5th, the 6th being mainly blackish. In the second specimen the only black is the tips of the 2nd and 3rd segments, the whole of the 6th and the base of the 7th. In the third specimen the marks are similar, but narrower, and rather less intense. The fore femora have a broad blackish central band which is quite distinct in one specimen, much less so in the second, the third having these legs missing. This character has

¹ Van der Wulp quotes page 126 incorrectly for 196.

² Bijd. tot. de Dierk, xvii, 89—90.

³ Tijd. v. Ent., liv, 75.

not been noted before. In one specimen the pleurae are a little black marked, in another they are entirely lemon-yellow except for a rather large pale orange spot below the wing root.

Macquart notes the second posterior cell is nearly petiolate. In two of the three examples before me it is quite distinctly so, as much as in many species of *Tipula*; in the third it is very shortly, but still practically so, and slightly more in one wing than the other. All these points prove the variability of the species in many particulars, and the comparatively small size of the discal cell, which is emphasized in the present specimens, is also a strong specific character.

Described from three ♀ ♀ in the Indian Museum collection, two from Bindukhera (Naini Tal Distr.), 3-iv-10, and one from Gangapur' Pattia (Naini Tal Distr.), 4-iv-10.

***Pachyrhina dorsopunctata*, mihi, sp. nov.**

♂ ♀. Bengal, South India, Ceylon. Long. ♂ 12—14, ♀ 15—18 mm.

Head deep yellow. Proboscis, labella and palpi more or less brownish. Antennal scape deep yellow, flagellum wholly black.

Thorax.—Dorsum between the stripes orange-yellow, the colour fading at the edges of the dorsum to paler yellow; sometimes the whole dorsum pale yellow. Thoracic stripes dark blackish brown, the median one sometimes a little paler towards the anterior margin. The dark marks on the prothorax and behind it, as in the other species, sometimes appearing as a definite continuation of the median thoracic stripe. Post-sutural stripes more of a flattened triangle in shape, not joined to the outer stripes in front of them. Scutellum black or dark brown, shining; metanotum yellowish on upper half, with or without narrow dark median line, black on lower half. Sides concolorous, or a little paler, upper and lower parts of sternopleurae a little more orange.

Abdomen yellow or orange-yellow, with a row of dorsal elongate triangular black spots in the ♂ which have a tendency to spread out on the hind margin, actually doing so on the last two segments. In the ♀, one specimen has the marks as in the ♂ but they are rather more extensive; the other has a black band on the hind margin of each segment. Traces of a black narrow side line in both sexes; belly yellowish.

Legs wholly yellow; tips of femora and tibiae narrowly black; tarsi blackish.

Wings very pale grey; subcostal cell dark brown, prongs of fork of upper branch of 4th longitudinal vein issuing quite separately from discal cell. Halteres yellowish.

Described from two ♂ ♂ and two ♀ ♀ in the Indian Museum from Katihar, 30-xi-09, type ♂, Bhogaon, 20-xii-09 [both Purneah District and *Paiva*]; Maddathorai, Travancore, South India, 17-xi-08, type ♀ [*Annandale*]. One ♀ from Ceylon is in the Vienna Museum.

GEOGRAPHICAL DISTRIBUTION.—Bengal, South India, Ceylon.
Type ♂ and ♀ in Indian Museum.

N.B.—The South Indian example, which has to be erected as the type ♀, the remaining ♀ being incomplete, has black bands on the abdomen instead of spots, but this is the only difference. It is somewhat akin to *P. doleschalli*, Os. Sac.

***Pachyrhina consimilis*, mihi, sp. nov**

♂ ♀. Himalayas. Long. 9—14 mm.

Head deep chrome-yellow; proboscis generally a little lighter, with a wide dark brown stripe on upper side and dark brown labella; palpi also dark brown. Back of head at junction with thorax, with a dark brown triangular mark. Antennal scape deep yellow, flagellum black, the joints distinctly but only slightly thickened at the base, verticillate hairs short. Sometimes in the ♀ the antenna is dark brown, the second joint of the scape being also brown tinged.

Thorax deep chrome-yellow. The three dorsal stripes deep black, shining, very clear cut; the median one, which attains the anterior margin, more or less extended downwards along the edge behind the prothorax, on which there is often a brown spot or streak on each side in this vicinity. The outer dorsal stripes turn sharply down over the sides at their tips, their limits sharply defined. The post-sutural elongate spots are equally deep shining black and clearly cut, reaching from above the root of the wing to the scutellum. Scutellum light livid brown, sometimes yellowish, with or without a brownish or blackish mark in the centre. Metanotum bright chrome-yellow, with a more or less distinct narrow or moderately wide brownish longitudinal stripe. Sides of thorax rather lighter yellow, sternopleurae with a tawny brown, semi-transparent spot on the upper and lower part, leaving the middle concolorous.

Abdomen normally bright or deep yellow, with, in the ♂, a longitudinal median black stripe of moderate width, composed of a row of elongate spots more or less united to one another, the black colour towards the tip spreading more or less over the whole dorsal surface. A lateral narrow stripe similarly formed.

In the ♀, the abdomen is wrinkled and bears a large, more or less square, blackish spot on each segment, generally of sufficient size to form an apparently continuous dorsal stripe, but the posterior margin itself of each segment is yellow and well defined. There are also numerous irregularly placed small black spots between the dorsal stripe and the rather broader (than in the ♂) lateral stripe each side. Belly similar to dorsal surface.

Genitalia in ♂ complex: a side plate is present, and a small yellow V-shaped ventral plate, protecting a somewhat conspicuous keel-like protuberance immediately above it, joined to the large swollen base of the claspers.

Legs variable; normally yellow, the femora becoming brownish

on apical half, sometimes quite blackish on that portion; but often the femora are mainly yellowish with an indistinct brownish or blackish ring of varying width at the tip. The tibiae vary from yellowish to brownish; the tarsi generally brownish yellow or brown.

Wings pale grey; the forks of the upper branch of the fourth longitudinal vein vary in their emergence from the discal cell, sometimes being distinctly separated, sometimes issuing simultaneously, and sometimes forming a short petiole. Stigma moderately large, varying from pale yellow to brown; subcostal cell varying from yellowish to rather dark brown. Halteres yellow.

Described from a lengthy series in the Indian Museum from Darjiling, 23—28-v-10 [*Brunetti*]; 5—10-viii-09 [*Paiva*]; 1-x-08 [*Brunetti*]; Kurseong, 19—24-vi-10, 5-vii-08, 5—8-ix-09, and Bhim Tal, 19—17-ix-06 [all *Annandale*]; Mussoorie, 22-v-05 [*Brunetti*], and Gangtok, Sikkim, 22-v-05. In the Vienna Museum is a ♀ from Sikkim.

GEOGRAPHICAL DISTRIBUTION.—Probably the greater part of the Himalayas.

Type ♂ and ♀ in Indian Museum.

NOTES.—Apparently the commonest species to be found in the hilly parts of North India, but no specimen has occurred either from the plains or even from a hilly locality apart from the Himalayas.

Section III. DOLICHOPEZINI.

SCAMBONEURA, Os. Sac.

vittifrons, Wlk. (*Limnobia*). Amboina. The type, a ♀ in the British Museum, is reduced to a thorax and a wing only. I can trace the existence of no other specimen. Osten Sacken (writing from memory of the type) removed the species to the present genus, presumably on the strength of the characteristic venation.

dotata, Os. Sac. Described from two ♂ ♂ from the Philippines.

MEGISTOCERA, W.

fuscana, W. Java. This genus is unknown to me, but Meijere records it from Java recently. Quite a number of species have been included in this genus which do not belong here yet the two original species included by Wiedemann are congeneric, *filipes*, Fab., from Guinea and *fuscana*, from Java. The sexes have also caused much confusion on account of the small size of the ♂ genitalia and the fact that some species have long (sometimes extraordinarily long) antennae in the ♂ only, whilst others have these organs short in both sexes. Osten Sacken clears up a number of mistakes (Berl. Ent. Zeits., xxx, 158) and recharacterises the genus, *loc. cit.* Species of *Eriocera* with very long antennae have several times been considered *Megistocerae*, but the very different

venation should prevent further error. It is as well to note that Macquart's figure gives an incorrect representation of the wing.

TANYPREMNA, Os. Sac.

omissinervis, Meij., Nova Guin. Results, 71, fig. 4 (1906). Recorded from Papua. The only other three species known are from Central America, Brazil and Australia.

DOLICHOPEZA, Curt.

Herr Meijere introduces a species, *gracilis* ♂ (Tijd. v. Ent., liv, 60, pl. iv, fig. 46, wing), from Java, and the Indian Museum possesses two others that I shall describe later.

Subfamily LIMNOBIINAE.

Section I. CYLINDROTOMINI.

This section has not been previously recorded from the East, but I am able to describe a species which appears to be a *Cylindrotoma* of a slightly different type to the other species known from Europe and elsewhere, or it may later on be regarded as the type of a new genus.

Cylindrotoma quadricellula, mihi, sp. nov.

♂. Darjiling. Long. 6-6½ mm.

Head viewed from above, oval; blackish, bare above; frons short, much wider on vertex where it is about one-fourth the width of the head. Face below antennae a little lighter; palpi small, black. Antennae: scapal joints short, yellowish, the fourteen joints of the flagellum dark brown, the joints very elongate, somewhat difficult to distinguish from one another, especially towards the tip, each joint covered with very long thin verticillate hairs quite irregularly arranged. *The whole antenna is as long as the whole body.*

Thorax reddish brown, *closely punctured* round the edge of the dorsum, a little in front of and between the three dorsal, almost concolorous stripes, the configuration of which is distinct although they show only a slightly darker shade of colour. A narrow band, a little lighter in colour, just below the dorsum, is free of punctures, but the sides of the thorax, below this band, the scutellum and the metanotum are all closely and conspicuously punctured.

Abdomen linear, narrow, dark red-brown, a little blackish here and there, practically bare; belly similar. Genitalia blackish, rather small; a pair of slightly pubescent two-jointed claspers, with some internal organs, protected by an upper and lower plate.

Legs.—Coxae brownish yellow, bare; remainder of legs similarly coloured, gradually becoming darker towards the tips, the tarsi being blackish.

Wings grey. Auxiliary vein apparently turns downward into the 1st longitudinal vein at some little distance beyond the middle of the wing, and it is connected just before its tip, by a short cross-vein with the costa.¹

The 1st vein turns distinctly into the 2nd a little beyond the level of the anterior cross-vein, and a little way before its tip it is connected itself with the costa by a cross-vein, presumably the marginal cross-vein. The 2nd longitudinal, which begins some distance before the middle of the wing, gently arcuating, turns abruptly up (at the point where it meets the anterior cross-vein, in a similar angle to that taken by the fourth vein in *Musca* and *Lucilia*) until it meets the 1st vein; thence running parallel to the costa and ending in it some little distance before the tip of the wing. The 3rd vein, which runs nearly straight to the exact tip of the wing, and the anterior cross-vein, originate together from the angle in the 2nd vein where the latter marks the end of the praefurca, this section being longer than the rest of the 2nd vein. Discal cell hexagonal, the lower half consisting of three sides, the cell twice as long as broad and about as long as the second and third posterior cells. Anterior cross-vein shorter than proximal side of discal cell; posterior cross-vein just beyond middle of discal cell; 5th vein sharply angled at its juncture with the posterior cross-vein, whence it runs straight to the wing-margin; 6th and 7th veins nearly straight. The first, second and third veins near their tips are microscopically spinose.

Described from three ♂♂ in the Indian Museum from Kur-seong, taken by Dr. Annandale, 18-vi-10 (type), 23-vi-10 and 6-vii-08.

DISTRIBUTION.—Darjiling district.

Type in Indian Museum.

Section II. LIMNOBINI.

DICRANOMYIA, Steph.

saltans, Dol., ♂ ♀ (*Limnobia* ? *id.*), Os. Sac.²

Recorded from Java and the Philippines. The whereabouts of the type is very uncertain. It is not in the Amsterdam Museum, but other specimens of this species, taken by Herr Jacobson in Java, are present. Specimens in the Indian Museum (four ♂♂ one ♀) are from Travancore, South India.

I should not be surprised to find the *Limnobia apicalis* of Wiedemann identical; if so the latter name has priority.

¹ It may be considered that the auxiliary vein turns upward to the costa, with a cross-vein joining it to the first vein, but it does not at all convey that impression.

² Berl. Ent. Zeits., xxvi, 88, notes.

Mr. F. W. Edwards, writing recently¹ on some Ceylonese Limnobiinae, puts this species in the genus *Thrypticomyia*, Skuse, and emends the spelling of the specific name to *saltans*.

cuneiformis, Meij. Tijd. v. Ent., liv, 23 ♂, pl. i, 2 (wing).

Very closely allied, as the author says, to *D. saltans*, Dol., but quite distinct. One ♀ in the Indian Museum collection is undoubtedly this species, and is from the Dawna Hills, Lower Burma (2—3,000 ft.), 2—3-iii-08 [*Annandale*]. The difference in the wings is sufficiently striking when the two species are placed side by side. Besides being distinctly narrower in *cuneiformis*, the 2nd longitudinal vein originates beyond three-quarters the length of the wing, and (reckoning from the origin of the 4th longitudinal) the inner end of the discal cell is placed at four-fifths of the wing's length, whilst in *saltans* it occurs very distinctly before that distance. In Meijere's species the veins from the 2nd longitudinal hindwards are much more removed to the tip of the wing than in *saltans*.

N.B.—It may be noted that both Doleschall and Meijere describe the tarsi of their respective species as snow-white. This is indeed so, but the basal part of the metatarsus (varying from a third to a half) is dark, like the tibiae. This is apparently an oversight, as it is not always easy to define the exact limits of each tarsal joint.

Mr. Edwards refers this species also to *Thrypticomyia*, a genus in which the basal part of the wing is extremely narrowed, without any vestige of anal angle. Personally I have my doubts of the validity of *Thrypticomyia* on account of intermediate forms (*vide post.*).

kobusi, Meij., ♂ ♀. Bijd. tot. de Dierk, xvii, 91, pl. viii, 5—6, Java. The type is in the Amsterdam Museum, from Java. Specimens in the Indian Museum identified by me as this species are from Kurseong, Darjiling district.

N.B.—If *Thrypticomyia* be valid, this species also will fall in it. **pulchra**, Meij., *loc. cit.* (*Rhipidia*).

id., *id.*, Tijd. v. Ent., liv (*Dicranomyia*).

* * * *

N.B.—In addition to *cuneiformis*, Meijere in the same paper describes the following species from Java, the types being in the Amsterdam Museum: *D. convergens*, ♂ ♀; *umbrata*, ♂ ♀; *punctulata*, ♂; *nervosa*, ♀; *tenella*, ♂ ♀. The genus must be extensively represented in the East, as I have in manuscript the description of no less than nearly twenty additional species, all from India.

longivena, Edwards, ♀. Ann. Mag. Nat. Hist. (8), viii, No. 43, 59. One ♀ from Dondra, Ceylon, taken 3-xii-07 by Mr. T. B. Bainbrigge-Fletcher.

¹ Ann. Mag. Nat. Hist. (8), viii, No. 43, p. 58 (1911).

LIMNOBIA, Meig.

costalis, W. East India. No sex stated. 'This is probably a good species but may not be a true *Limnobia*. The type still exists in the Copenhagen Museum, marked "Ind. or." and is in rather bad condition. The wings are intact but the sex is indeterminate, as the tip of the abdomen is gone. My thanks are due to Prof. Lundbeck for the above information.

apicalis, W., ♂. Sumatra. Of this species nothing remains of the type but the thorax and wings. In the Winthem collection at Vienna Museum. As stated just previously I am inclined to think this species identical with *Dicranomyia saltans*, Dol. (v. *D. saltans*).

bibula, W., ♀. China. Osten Sacken says it is probably a true *Limnobia*. It may possibly be identical with a species in the Indian Museum.

(L. ?) **aterrima**, Wlk., ♀. East India. The type is not to be found in the British Museum, but Osten Sacken thought it might be an *Eriocera*. From this opinion it is almost certainly not a *Limnobia*.

infixa, Wlk., ♂. Papua. The type (the only specimen known, apparently) is in the British Museum, and though now in too bad condition for comparison, it was identified as a true *Limnobia* by Osten Sacken years ago.

sanguinea, Dol. Java. Of this species there is no information available beyond the original descriptions. The whereabouts of the type is unknown. No sex is stated but from the figure it appears to be a ♂.

N.B.—I have in MS. the descriptions of nearly a dozen new species from India.

CERATOSTEPHANUS, mihi, gen. nov.

General appearance and structure identical with *Limnobia*, Mg., and *Dicranomyia*, Steph. Venation as in *Limnobia*, except that the auxiliary vein, ending a little beyond the middle of the wing, is almost exactly opposite the origin of the 2nd longitudinal vein, with the subcostal cross-vein at its tip.

Eyes closely touching on upper side for the whole distance from the vertex, also contiguous on under side. Proboscis of moderate length, palpi stout, rather long, 4-jointed, 1st joint the shortest.

The second generic character of importance is the extraordinary *appendages* to the *antennae*. The 1st scapal joint is normal, moderately long, rather broader at the tip, the 2nd is large, wider, oval, both joints with stiff hairs. The flagellum consists of twelve elongate joints, each with a pair of diverging strong long bristly hairs on the upper side; situated a little beyond the base and furnished on the under side at about the same place with a *pair of large elongate conspicuous palp-like pubescent appendages*.

The legs are very thin and much lengthened.

NOTES.—The peculiar formation of the antennae in this genus immediately distinguishes it from all others known from the East. There is a resemblance in the antennal appendages to Westwood's illustration of *Ozodicera gracilis*,¹ Westw., but that genus belongs to the subfamily Tipulinae.

***Ceratostephanus antennatus*, mihi, sp. nov.**

♂. Western Himalayas. Long. 4 mm.

Head.—Back of head blackish, with a few bristles. Owing to the construction of the eyes, which are absolutely contiguous from the vertex downwards, there is no frons, but a row of irregular-sized bristles set between the eyes shows the only line of demarcation between them. Proboscis brown, palpi dark brown, pubescent, first joint the shortest, the others comparatively long. Antennae: 1st scapal joint elongate, broader at tip, 2nd enlarged considerably, oval, both with stiff hairs. The flagellum is of twelve elongated cylindrical pale yellow joints, with a pair of strong long diverging bristles on the upper side just beyond the base. On the under side at about the same place are two dark brown elongate palp-like processes, very conspicuous, pendant and of considerable size, with whitish pubescence.

Thorax brownish, darker on the dorsum; scutellum and metanotum of similar colour.

Abdomen brownish yellow, sides of abdomen and posterior margins of segments distinctly blackish; belly similar. Genitalia consisting of a pair of large linear fleshy claspers of two joints of equal length and size, below which is a horny narrow elongate style, apparently immovable.

Legs brownish yellow; tips of femora and tarsi barely darker.

Wings.—Venation as in typical *Limnobia*, except that the auxiliary vein ends just above the origin of the second longitudinal vein, with the subcostal cross-vein at its tip. Colour of wing almost clear, with very numerous very small pale grey spots and short streaks covering the surface. A very slightly darker grey, just sufficient to be perceptible, over the cross-veins, the origin of the 2nd vein, tip of 1st vein, tip of 7th vein, and at two places on the costa, the first nearly basal, the second opposite the tip of the 7th vein. In all the darker grey spots along the costa the 1st longitudinal vein is black.

In the rest of the wing the veins are generally brownish, but here and there for a short distance they are sometimes pale yellow, sometimes black. Halteres pale yellowish, clubs barely darker.

Described from a single ♂ from Simla, 24-iv-07 [*Annandale*].

GEOGRAPHICAL DISTRIBUTION.—Western Himalayas.

Type in the Indian Museum.

¹ Trans. Ent. Soc. Lond., 1881, pl. xviii, fig. 8a, antenna, 8b, wing.

ATYPOPTHALMUS, mihi, gen. nov.

Allied to *Limnobia*, Meig., from which it differs only in the eyes being *absolutely contiguous in both sexes* from the vertex to half-way to the base of the antennae; they are also contiguous on the lower side in both sexes.

There is a distinct neck; the proboscis is about half the height of the head; the male genitalia are large and conspicuous.

Atypophthalmus holopticus, mihi, sp. nov.

♂ ♀. Calcutta. Long. $4\frac{1}{2}$ —5 mm.

Head.—Vertex and back of head yellowish grey with long stiff hairs. *Eyes contiguous above in both sexes* for a considerable distance, below which is a very narrow, short grey frons; they are also contiguous on the under side. The surface of the eyes is bent inwards.¹ Proboscis, palpi and antennae brownish yellow or pale brown, the joints subcylindrical, a little elongated; the last joint attenuated, "pinched" towards the tip, making it appear almost like two joints.

Thorax.—Dorsum brownish yellow. Three brownish oval spots, the upper one taking the place of the usual median stripe, situated just in front of the suture, but only extending half-way to the anterior margin, the other two spots placed behind the suture in the usual position. Scutellum of the same colour as these spots. Sides of thorax and metanotum brownish yellow, the centre of the latter brownish, a lateral dark brown stripe across the pleurae.

Abdomen in ♂ blackish, in ♀ more dark brownish, shining; belly in ♂ with the basal part of the basal segments yellowish, in the ♀ belly almost wholly yellowish.

Genital organs in ♂ large, conspicuous and complex:—

A large squarish brown dorsal plate, with the corners rounded and the hind margin emarginate, with stiff black hairs on its dorsum and long yellow hairs on the hind margin. The large first joint of the claspers is irregularly shaped, longer than broad, narrower apically, where from an invaginated recess issue from each joint a strong black hook and a moderately long cylindrical, yellowish appendage of softer texture with hairy tip. A very distinct inner pair of claspers are two-jointed, the first joint approximately ovate, narrower at the tip, the second joint evidently hard, horny, shining brown, in the shape of a long hook. There is also a peculiar, large central piece, apparently fleshy, yellowish in colour, with an obtuse tip which reaches posteriorly not beyond the first joint of the inner pair of claspers. This central piece is enlarged below into a sort of cup-shaped cavity

¹ This may be accidental, or due to shrinking after death, but the specimens are in perfect condition otherwise, and show no trace of damage; moreover, the feature indicated is present in both eyes of both specimens.

facing hindwards, and appears to be attached to the root of the hypopygium immediately above the ventral V-shaped plate.¹

Ovipositor in the ♀ apparently normal but somewhat large, especially the basal portion.

Legs brownish yellow, tips of femora darker.

Wings pale grey, venation practically normal; auxiliary vein ending nearly half-way between the beginning of the 2nd vein and the tip of the auxiliary vein. Discal cell nearly square, about as long as the 2nd and 3rd posterior cells, its inner side in a direct line with the posterior cross-vein. Stigma distinct but ill defined, blackish, a faint small infuscation at the base of the 2nd vein. Halteres: stem yellow, clubs blackish.

Described from a single male and female taken by Dr. Annandale in Calcutta, the ♂ (8-ix-10) in a spider's web, the ♀ (20-viii-09) in the house, at night.

GERANOMYIA, Hai.

sorbillans, W., ♀ (*Limnobia*). Sunatra. Types in Dr. Trentepohl's and the Wiedemann collection, at Vienna.

Four new species are described by Meijere² from Java: *nitida* ♀; *argentiifera* ♂ ♀; *montana* ♂ ♀; and *notata* ♀. The types of these are in the Amsterdam Museum. Mr. Edwards adds one from Ceylon,³ *G. fletcheri*, ♀, from Madulsima, 19-v-08 (type), and 21-xii-07 [*T. B. Fletcher*].

In addition to the three herein described, I have descriptions in manuscript of six others from various parts of the Indian Empire.

Geranomyia vinaceobrunnea, mili, sp. nov.

♀. Western Himalayas. Long. 6 mm.

Head dark grey: frons narrow, narrower on vertex, whitish grey. Proboscis black, a little longer than head and thorax together. Antennae: scape yellowish except tip of second joint which is, with the flagellum, dark brown.

Thorax mainly brownish yellow, with three dorsal claret-brown stripes, the outer ones short and quite united with the median one, which is moderately wide, attaining the anterior margin, and continuing narrowly on the brownish yellow neck. Dorsum behind suture claret-brown. Scutellum yellow; metanotum grey. Sides of thorax yellowish, with light claret-coloured reflection just below the dorsum.

Abdomen dark brown, with a little pale hair; posterior margins of segments pale yellowish. Belly yellowish; ovipositor brownish yellow.

Legs.—Coxae brownish yellow, with a trace of claret-coloured reflections; remainder of legs yellowish, femora tips barely darker.

¹ This so-called ventral plate appears to be the sternum of the eighth segment.

² Tijds. v. Ent., liv (1911).

Ann. Mag. Nat. Hist. (8), viii, 60.

Wings pale yellowish grey, glassy, iridescent. Auxiliary vein ends nearly half-way between the base of the 2nd longitudinal and the marginal cross-vein, which latter is placed exactly at the tip of the 1st longitudinal, and just beyond the middle of the marginal cell. Base of 3rd vein oblique, two and a half times the length of the anterior cross-vein. Discal cell twice as long as broad, as long as the 2nd and 3rd posterior cells; posterior cross-vein barely beyond base of discal cell. Veins on distal part of wing practically parallel. Stigma light brown, ill defined but distinct, situated over the marginal cross-vein. Halteres brownish yellow.

Described from one ♀ taken by Mr. Howlett at Simla, x-08.

Type in the Pusa collection.

Geranomyia genitalis, mihi, sp. nov.

♂ ♀. South India, Assam. Long. 5 mm.

Head blackish. Proboscis as long as head and thorax together, palpi, placed at the middle, all black. Antennae black, joint not very distinct.

Thorax light grey. Dorsum mainly occupied by a *large shining black spot*, projecting broadly forwards to the anterior margin. The linear depression behind the suture wide, light grey, as are also the scutellum and the middle part of the metanotum; the sides of the latter, with the pleurae, being shining dark brown. Sides of thorax light grey.

Abdomen.—Dorsum blackish, belly yellowish, genitalia in ♂ unusually formed. A small square upper brown plate with an underlying pointed piece. A large pair of complicated claspers, the first joint thick, hairy, brownish black, shining; the second of equal or greater length, rather larger, oval, of roughened, sponge-like appearance. The first joint bears a small concolorous, hairy palp-like organ on the inner side, near the dorsum; below which is a slender yellow semi-transparent hook, and below which again is a rather small, bifid, interior appendage. The whole organ lightly hairy, except the second joint of the claspers, which is practically bare. In the ♀ the ovipositor is normal. blackish, the terminal blades reddish yellow.

Legs mainly brown; coxae, base of femora and basal half of tarsi, yellowish.

Wings pale yellowish grey, conspicuously iridescent. Stigma oval, moderate-sized, brown, placed over marginal cross-vein. Auxiliary vein ends nearly half-way between the origin of the 2nd longitudinal vein and the marginal cross-vein. The 2nd vein originates at the middle of the wing, the praefurca two-thirds as long as the remainder: base of 3rd vein three or four times as long as anterior cross-vein: submarginal cell considerably longer than 1st posterior cell. Discal cell twice as long as broad, barely shorter than 2nd and 3rd posterior cells: posterior cross-vein immediately after base of discal cell. Halteres blackish brown.

Described from two ♂♂ (including type) from Tenmalai, Western Ghats (western side), Travancore, 21-xi-08 [*Annandale*]: nine ♂♂ (Pusa coll.) from Nongpoh, Assam, ix-06; a type ♀ and three other ♀♀ from the latter locality taken during September also.

Type ♂ in Indian Museum; ♀ in Pusa collection.

N.B.—The conspicuous shining black spot on the light grey thorax, and the unusually constructed male genitalia will render this species easily distinguished.

***Geranomyia semifasciata*, mihi, sp. nov.**

♀. Darjiling. Long. $5\frac{1}{4}$ mm.

Head light grey. Frons very narrow. Proboscis black, as long as head and thorax together. Antennae brownish yellow. flagellum darker than scape.

Thorax.—Neck yellowish, a dorsal distinct dark brown stripe and a lateral less distinct one on each side. Dorsum of thorax yellowish, with a brownish tinge. Three very narrow ill-defined but obvious reddish brown stripes, well separated; the median one barely reaching the anterior margin.

Behind the suture the space wholly occupied, except the wide greyish post-sutural depression, by two large brownish spots, the colour gradually merging in that of the sides.

Sides of dorsum with whitish reflections. Sides of thorax yellow; scutellum and meta-notum brownish.

Abdomen brownish yellow, posterior border of each segment blackish, the colour extending along the sides more or less, ovipositor yellowish.

Legs pale yellowish, tips of femora a little blackish.

Wings pale yellowish grey. Auxiliary vein ends midway between the base of the 2nd vein and the tip of the 1st. The 2nd begins at the middle of the wing; the praefurca is nearly as long as the rest of the vein, which is a little sinuous and curved upwards at tip. Marginal cross-vein placed distinctly beyond the middle of the marginal cell. Base of 3rd vein two and a half times as long as anterior cross-vein. Discal cell much broader distally, a little longer than double its average width, and a little longer than the 2nd and 3rd posterior cells. Posterior cross-vein in a line with the base of the discal cell, the anterior cross-vein is in the same straight line.

The markings of the wing are brown in colour, and are placed as follows: Three narrow streaks begin (anterior to the middle of the wing) on the costa, and extend posteriorly nearly to the middle of the wing, the first streak nearly basal. A fourth narrow costal streak begins at the tip of the auxiliary vein and extends to the base of the 3rd vein. The next costal streak (the widest of all) is over the marginal cross-vein, and is clear cut, being suddenly reduced to half its width at the 2nd longitudinal vein, beyond which it is continued, terminating abruptly at the 3rd vein. The two

remaining costal marks are a conical (reversed) and a triangular spot, both touching the 3rd vein. The anterior cross-vein, the inner side of the discal cell, and the posterior cross-vein bear a small spot each, these spots being practically contiguous. The distal side of the discal cell is brown suffused and the 1st posterior cell contains two lighter spots, the 2nd posterior cell containing one. The 2nd basal cell has three small spots, the tip of the 7th vein is suffused. Halteres, stem brownish yellow, clubs black.

Described from a single specimen taken by Mr. F. M. Howlett at Darjiling, 3—9-vi-09.

Type in the Pusa collection.

***Geranomyia semistriata*, mihi, sp. nov.**

♀. Western Bengal. Long. nearly 5 mm.

Head dark grey, frons narrow. Proboscis black, distinctly longer than head and thorax together; palpi black, inserted before the middle of the proboscis. Antennae brownish yellow, sometimes darker. Back of head and neck blackish grey.

Thorax.—Dorsum brownish or light grey, grey dusted. Three narrow reddish brown stripes: the median one from the anterior margin to about the middle of the dorsum; the outer ones begin behind the shoulders and are carried over the suture without interruption to the posterior margin; an additional narrow intermediate stripe between them commencing behind the suture and continued to the base of the scutellum: a short narrow stripe on each side above and in front of the wing-root. Prothorax brownish yellow in one specimen, edge of dorsum and sides of thorax (in type specimen) light grey, pleurae yellowish, with some grey reflections. Scutellum and metanotum concolorous with dorsum of thorax, edge of former brownish yellow.

Abdomen dark claret-brown, roughened, belly yellowish; ovipositor large, robust, black, barely shining, terminal blades reddish yellow.

Legs.—Coxae and femora brownish yellow, tips of femora slightly thickened and blackish; tibiae and tarsi brown.

Wings pale grey, with seven moderately dark brown spots on the costa placed approximately equidistantly: the third enclosing the origin of the 2nd longitudinal vein; these first three spots extending posteriorly barely to the 4th longitudinal vein; the fourth spot terminates over the fork of the 2nd vein; the fifth (the largest, enclosing the marginal cross-vein) extends posteriorly to the 3rd vein; the seventh is very small, triangular, placed at the extreme tip of the 3rd vein. A narrow brown irregular line encloses the anterior and posterior cross-veins, with the basal side of the discal cell, and there is a small suffusion over the proximal side of the discal cell. The venation is normal; basal part of 3rd longitudinal vein long, the remainder of the vein parallel to the 2nd; anterior cross-vein short. Discal cell twice as long as wide; posterior cross-vein distinctly but not greatly before the base of the discal cell.

The 5th and 7th veins very narrowly brown suffused. Halteres: stem pale yellow, knobs blackish brown.

Described from two ♀ ♀ from Paresnath, Western Bengal (4,300—4,500 ft.), 15-iv-09 [*Anmandale*].

Type and *cotype* in Indian Museum.

G. fletcheri, Edwards, Ann. Mag. Nat. Hist. (8), viii, No. 43, 58 (1911).

One ♀ from Dondra, Ceylon, 3-xii-07, taken by Mr. T. B. Fletcher.

RHIPIDIA, Mg.

javensis, Meij., ♂. Tijd. v. Ent., liv, 31 (1911).

A recently described species from Java.

N.B.—The *Rhipidia pulchra* described by Meijere (Bijd. tot. de Dierk, xvii) is now referred by him to *Dicranomyia*.

GONIODINEURA, Wulp.

nigriceps, Wulp, ♀. Java. The type, which was in Amsterdam Museum, is now lost.

DAPANOPTERA, Os. Sac., in Westw.

perdecora, Wlk., ♂ (*Limnobia*). Papua. The type, from Dorey, New Guinea, is still in good preservation in the British Museum.

auroatra, Wlk., ♀ (*Limnobia*). Mysol. Type in British Museum in good condition.

plenipennis, Wlk., ♂ (*Limnobia*). Papua.

Westw., Tr. Ent. Soc. (1881), 366, pl. xviii, 2.

Type in fair condition in the British Museum, the extraordinary wing markings making comparison easy.

latifasciata, Wlk., ♀ (*Limnobia*). Papua. Type in British Museum in good condition.

N.B.—Of all these four species the only specimens known, so far as I can ascertain, appear to be the original types.

LIBNOTES, Westw.

aurantiaca, Dol., ♂ (*Limnobia*). The type, from Amboina, in the Vienna Museum is damaged, but comparison is possible. Osten Sacken notes the species (Berl. Ent. Zeit., xxxi, 181).

impressa, Wlk., ♀ (*Limnobia*). From Sarawak. The type (in British Museum) is useless for comparison.

imponens, Wlk., ♀ (*Limnobia*). Again here the type (in British Museum) is in too bad condition for comparison. Makassar.

strigivena, Wlk., ♂ ? ♀ (*Limnobia*). Papua. Type in British Museum in bad condition, a ♀, from Dorey; the wing-markings alone being available for comparison. Meijere has

received from Java what he believes is the ♀ of this species and adds some notes.

quadrifurca, Wlk., ♀ (*Limnobia*). Dorey, Papua. The type, in the British Museum, is considerably damaged, but being conspicuously marked could be used for identification.

innotabilis, Wlk., ♀ (*Limnobia*). Ceram. Type, in the British Museum, too badly damaged to determine the species with certainty.

N.B.—Of the above five species I can trace the existence of no other specimens than the types.

thwaitesiana, Westw., ♂. Ceylon. Type in Hope collection, Oxford University Museum. Prof. Poulton kindly informs me that recognition of the species would be possible, though the specimen is not in good condition.

notata, Wulp., ♂ ♀.¹ Originally described from a type ♂ in the Amsterdam Museum, but now lost. The Museum has other examples of the species taken in Java by Jacobson and identified by Dr. Meijere, who has recently described the ♀.²

simplex, Os. Sac., ♂. Ternate. The type is the only specimen known, apparently, and is in the Genoa Museum, in rather damaged condition.

poeciloptera, Os. Sac., ♂ ♀. Java, Sumatra. Of this species both sexes were originally described, but Prof. R. Gestro informs me that there is now only one specimen left, but does not state which sex it is. They were from Mount Singalang. Mr. Edwards records a ♀ from Pundaluoya, Ceylon, taken by Mr. E. E. Green.

semperi, Os. Sac. Philippines. A single ♀.

termitina, Os. Sac. Philippines. A single pair.

familiaris, Os. Sac. Philippines. A single ♂. Meijere notes a ♂ and ♀ from Java probably representing this species.

N.B.—The types of these last three species are presumably in the Osten Sacken collection. I cannot definitely trace them.

Prof. Meijere describes four new species recently:³ *punctipennis*, ♂; *nervosa*, ♂; *forcipata*, ♂ ♀; and *rufa*, ♀. The first I had already described (but not published) from four specimens in the Indian Museum (two ♂ ♂, two ♀ ♀), from Darjiling (7,000 ft.), 6-viii-09 [*Paiva*]; Mazbat, Mangaldai District, Assam, 11-15-x-10 [*Kemp*]; and Peradeniya, Ceylon, 5-viii-10. A ♀ in the Vienna Museum from Ceylon. The sexes are identically marked.

There is no doubt that another of my MS. species is identical with *rufa*, and of this also both sexes are present amongst the four specimens in the Indian Museum.

In the ♂ the costal cell is bright yellow as far as the stigma, which is brown. Meijere describes only the ♀, in which the costal cell is black or blackish. A ♀ from Ceylon is present in the Vienna

¹ Wulp also notes the species in Med. Sum. Exped. Dipt., 12.

² Tijd. v. Ent., liv, 34 (1911).

³ Tijd. v. Ent., liv, 35, *et seq.* (1911).

Museum collection. In the Indian Museum are yet two undescribed species which will be characterized by me in my "Fauna of British India" volume.

Section III. RHAMPHIDINI.

ELEPHANTOMYIA, Os. Sac.

argentocincta, Wlk., ♀ (*Limnobia*). Sarawak. The type (in British Museum) is beyond use for comparison, and is the only specimen known, apparently.

delectata, Wlk., ♂ ♀ (*Limnobia*). Ceram. One of each sex is present (types) in the British Museum, in bad condition, but the conspicuous markings would make the species recognisable.

filiformis, Wlk., ♂ (*Limnobia*). A unique type from Salawatti in the British Museum, useless for recognition, both wings being gone.

N.B.—These species were placed provisionally in *Elephantomyia* by Osten Sacken many years ago, and do not appear to have been met with since.

DICRANOPTYCHA, Os. Sac.

signaticollis, Wulp, ♂. Java. The type of this species, originally in the Amsterdam Museum, is now totally lost, and I have seen no further record of it. The author's excellent coloured plate and description should make identification easy.

Orimarga borneensis, mihi, sp. nov.

♀. Borneo. Long. 3 mm.

Head dark grey, with black hairs, frons comparatively narrow, especially towards the antennae. Proboscis dark brown; palpi brownish yellow. Antennae brownish yellow, the flagellum of 14 uniformly oval joints.

Thorax dark brownish yellow, almost blackish grey, scutellum and metanotum similar, sides a little more yellowish.

Abdomen brownish yellow or reddish brown. Ovipositor rather swollen at the base, blackish, the blades normal, brownish yellow, the upper pair the longer.

Legs brownish; the coxae and femora a little lighter.

Wings pale grey. Auxiliary vein ends half-way between the origin of the 2nd vein and the marginal cross-vein, the 1st longitudinal ends some little distance beyond the tip of the auxiliary, the marginal cross-vein near its tip. The 2nd vein begins before the middle of the wing, the marginal cross-vein just beyond the middle of the marginal cell. The 2nd gently bisinuate; the 3rd vein originating at a rounded angle a little before the marginal cross-vein, running parallel to the 2nd vein. Anterior cross-vein a little beyond the marginal cross-vein,

the 1st posterior cell with almost parallel sides, very slightly narrower at the tip. The 4th longitudinal forks just before the anterior cross-vein, the lower branch forking again widely at its middle. Posterior cross-vein in the middle of the wing, halfway between the origin of the 2nd and of the 3rd veins. The 5th vein practically straight, the 6th very gently sinuate, the 7th approximate to the 6th for some distance at its base, afterwards running straight to the hind margin. Halteres pale yellowish, clubs blackish.

Described from three ♀ ♀ in the Indian Museum from Borneo, taken 27-vi-10 by Mr. Beebe 10 miles south of Kuching, Sarawak.

Type in Indian Museum.

GYMNASTES, mihi, gen. nov.

Head set closely on to the thorax without any neck. Eyes rounded, bare, widely separated above by a very broad frons, separated on under side by a moderately wide, parallel, rather convex space. Proboscis stout but very short; palpi four-jointed, narrow, cylindrical, normal length. Antennae of sixteen joints; the 1st scapal joint rather short, cylindrical, 2nd much narrowed, about the same length; flagellar joints cylindro-ovate, the 1st longer than the rest, about equal to the 2nd scapal joint.

Thorax moderately arched; collare rather enlarged and distinct, suture distinct, post-sutural depression not very pronounced. Scutellum small.

Abdomen linear, of only seven obvious segments. Genitalia normal.

Legs moderately long and slender; anterior femora slightly enlarged towards the tip, hind femora longer than the others and very considerably enlarged at the tip, having the appearance of "Indian clubs." Metatarsus more than half the length of the tibiae, the other joints short. Tibiae without spurs at the tip, but the hairs are considerably stronger about the tibia tip.

Wings elongated, narrowed at base and slightly curved inwards near the basal part of the costa. One submarginal cell, four posterior cells, a discal cell. Auxiliary vein barely apparent; so closely approximate to the 1st longitudinal vein that it is only visible just before the middle of the latter vein, where that vein takes a sudden V-shaped bend downwards, forming a "kink." The 1st vein sinuous towards its tip, ending beyond the middle of the wing; 2nd longitudinal vein begins just before the middle of the wing, running nearly straight to the margin; the marginal cross-vein near, but not close to, the tip of the 1st vein. The 2nd vein unforked, the 3rd vein originating just before the marginal cross-vein, its basal section short, the rest of the vein straight. Anterior cross-vein nearly in a line with the basal section of the 3rd vein, situated at the base of the discal cell, the 1st posterior cell having approximately parallel sides. The 4th vein emerges from the 5th at some considerable distance from

its base, forming a right angle, and in contact with the "kink" in the 1st longitudinal vein immediately above. Upper branch of 4th vein forked immediately on quitting the discal cell, the two veinlets springing simultaneously and diverging, making the 2nd posterior cell pointed at its basal end. Discal cell quadrangular, very narrow, slightly broader at the tip. Lower branch of 4th vein forming, with its basal section, a gentle curve; posterior cross-vein situated at the base of the discal cell, making the 4th posterior cell nearly as long as the 2nd basal cell. The 5th vein gently curved at the tip, the 6th nearly straight, the 7th nearly straight, moderately short, the wing-margin a little emarginate where the vein ends.

Gymnastes violaceus, mihi, sp. nov.

♂. Ceylon. Long. $2\frac{1}{4}$ — $2\frac{1}{2}$ mm.

Head.—Frons brilliantly shining violet-blue, with an isolated hair here and there. Proboscis yellowish, palpi brownish. Antennae brownish yellow, becoming a little darker brown towards the tips. closely yellowish white pubescent on the flagellum, the scape bearing only a few short bristly hairs. Face below antennae blackish, dull.

Thorax brilliantly shining violet-blue, an irregular row of dorso-central short, yellowish hairs; scutellum blackish grey, dull.

Abdomen brilliantly shining violet-blue, traces of pale yellow very short hairs on posterior margins of segments, and more distinct. similar hairs at the sides of the abdomen. Belly similar, genitalia moderately large, a basal pair of cylindro-ovate large fleshy claspers, with a second joint consisting of a long narrow horny slightly curved appendage.

Legs yellowish; a sub-apical broad dark brown ring on femora and tibiae, both bands darker and broader on the hind pair of legs. Tarsi black except the yellowish basal half to all the metatarsi.

Wings.—Venation in accordance with the generic characters; nearly clear; with four cross-bands, moderately blackish, all beginning on the costa. The first two are narrow, beginning respectively over the "kink" in the 1st longitudinal vein (in front of the origin of the 4th vein), and the origin of the 2nd vein, both continuing posteriorly as far as the 7th vein, where they meet, the 7th vein being clouded anteriorly. The third band is the widest and begins on the costa widely each side of the marginal cross-vein, continuing posteriorly, embracing the cross-veins and the whole of the discal cell, to the posterior margin of the wing, where it becomes fainter.

The fourth band is apical, fairly wide, its proximal edge a straight line, cutting the 1st posterior cell at two-thirds its length from the base. Halteres with narrow black stem, the clubs with conspicuous chalk-white tips.

Described from three ♂♂ taken at Kandy, 22-v-10 (type), and Peradeniya, 15-vii-10, by Messrs. Green and Gravely.

GEOGRAPHICAL DISTRIBUTION.—Ceylon.

Type in Indian Museum.

N.B.—A very distinct and conspicuous species belonging to a peculiarly distinctive genus.

TEUCHOLABIS, Os. Sac.

exclusa, Wlk., ♀ (*Limnobia*). Papua. The type in the British Museum is much damaged, all the legs being gone.

bicolor, Os. Sac., ♂. Sumatra. Type in Genoa Museum, from Mount Singalang (Sumatra), in indifferent condition.

fenestrata, Os. Sac., ♂ ♀. Described from a ♂ and ♀ in Bigot's collection and also from specimens in the Leyden Museum, but the author does not designate any actual type specimen. The three specimens in the Leyden Museum are in very bad condition.

It is quite a common species in Ceylon, the males hovering in small clusters under trees overhanging roads. The ♀ seems much the scarcer sex. The Indian Museum has a good series from Ceylon and I have seen it from the Khasi Hills (Assam) and from Darjiling.

Present also in the Vienna Museum, the Pusa and my own collection, in all three from Ceylon.

determinata, Os. Sac., ♂. Sula (Indo-Malay Archipelago). The author says, "I preserve the name under which I found it in the British Museum." A unique ♂.

ATARBA, Os. Sac.

Of this genus Meijere introduces three species (Tijd. v. Ent., liv, 42, 43 (1911)), *nebulosa* (no sex stated), *pilifera* (♂ ♀) and *diffusa* (♀), all from Java.

Section IV. ERIOPTERINI.

CONOSIA, Wulp.

irrorata, W., ♂ ♀ (*Limnobia*). Originally described from Java but probably the most widely distributed species of Tipulidae in the Orient. It has the appearance of a cross when at rest, which fact gives the name to one of its synonyms, *Limnophila crux*, Dol.

The **CLADURA** group.

Table of genera.

A Subcostal cross-vein placed *near the tip of the auxiliary vein*. Discal cell *present*, its proximal end *rectangular*. Antennal scape *long*, normal;

- flagellum of fourteen *oval* joints. The 7th longitudinal vein normal CLADURA, Os. Sac.
- AA Subcostal cross-vein placed *very far before* the tip of the auxiliary vein, just after the origin of the 2nd vein, *near the middle of the wing*.
- B The 1st longitudinal vein nearly as long as the anterior branch of the 2nd vein, ending close to it near the wing-tip. Marginal cross-vein placed soon after the fork of the 2nd vein, a considerable distance from the tip of the 1st vein. Discal cell *present*, its proximal end *pointed*. Antennal scape *very short*, the joints almost annular; flagellum of *fifteen very elongate* joints. The 7th longitudinal vein less than half the length of the 6th, turning sharply into the margin at its tip .. PARACLADURA, gen. nov.
- BB The 1st longitudinal vein ends (turning sharply up to the costa) just beyond the tip of the auxiliary vein and *some distance from* the tip of the anterior branch of the 2nd vein, also a *considerable distance* from the wing-tip. Marginal cross-vein at the tip of the 1st longitudinal vein. Discal cell *absent*, coalescent with the *second* posterior cell, the proximal end of which is *pointed*. Antennal scape normal (long), flagellum of *thirteen oval* joints. The 7th longitudinal vein normal, as in *Cladura* CLADUROIDES, gen. nov.

CLADURA, Os. Sac.

Cladura flavescens, mihi, sp. nov.

♂ ♀. Darjiling. Long. 3—3 $\frac{1}{4}$ mm

Head.—Frons broad, more than one-third the width of the head; vertex convex, both brownish yellow; back of head concolorous, with long brown stiff hairs. Proboscis brownish yellow, palpi a little darker. Antennal scape brownish yellow; first scapal joint moderately long and stout, subcylindrical, second joint shorter and broader: flagellum of fourteen oval joints, gradually diminishing in breadth but increasing in length as the tip of the antenna is reached; minute whitish pubescence, each joint with a single verticil of apparently three or four long hairs.

Thorax elongate and rather convex above; produced forward into a distinct but short, stout neck. Brownish yellow, shining, unmarked; some black hairs on posterior part of dorsum above the wings. Scutellum and metanotum concolorous, the former with a few hairs. Sides of thorax brownish yellow.

Abdomen in ♂ yellowish brown with sparse pale yellow hairs; in ♀ dark brown on dorsum, yellowish on belly. Genitalia in ♂ brownish yellow (not easily viewed, as the claspers in the

single ♂ are tightly closed), apparently consisting of the normal pair of claspers of which only the thick subconical basal joint can be seen. In the ♀ the ovipositor is brownish yellow, rather long, conically produced at the base, to which are attached two pairs of nearly straight, elongate valves, the lower pair much shorter, and twisted round somewhat to the side.

Legs uniformly brownish yellow, slightly darker towards the tips of the tarsi.

Wings pale yellowish grey, moderately iridescent, unmarked. Auxiliary vein ends at some distance beyond the middle of the wing, the subcostal cross-vein placed shortly before its tip, connecting it with the 1st longitudinal, which latter ends a little before half the distance between the tip of the auxiliary vein and the tip of the wing. The 2nd vein begins distinctly before the middle of the wing, well arcuated, forking before the tip of the 1st vein; the praefurca fully as long as the lower branch. The marginal cross-vein, which is not very distinct, but obviously present, is placed just at the fork of the 2nd vein, the upper branch of which is a good deal shorter than the lower one. 3rd vein originating at right angles from a little anterior to the fork of the 2nd, its basal part short (shorter than the anterior cross-vein), thence running straight to just below the wing-tip. Anterior cross-vein and base of discal cell practically in a line with the basal part of the 3rd vein. Discal cell pentagonal, much broader distally, its proximal side somewhat oblique, about as long as the 4th posterior cell.

Anterior branch of 4th vein forked near tip, making *five posterior cells*, of which the 1st is of the same length as the 2nd submarginal, the 2nd is triangular, the 3rd and 4th subequal, the 5th normal, the posterior cross-vein being situated a little before the middle of the discal cell.

The 5th, 6th and 7th longitudinal veins nearly straight. Halteres pale brownish yellow.

Described from a single specimen of each sex taken respectively, 7-viii-09 and 6-viii-09, at Darjiling by Mr. Paiva.

Types in Indian Museum.

N.B.—The wing agrees exactly with Needham's figure (pl. 22, fig. 2) of the North American species *indivisa*, Os. Sac., except that the marginal cross-vein in my species is a little more proximad and the second posterior cell is triangular, instead of what may be described as attenuated bell-shaped as in Needham's figure of *indivisa*.

Incidentally this author's figure shows no subcostal cross vein, which however is distinctly present in *flavescens*, placed, as stated by Osten Sacken, near the tip of the auxiliary vein.

Note on CLADONEURA, Scudd.

Needham figures a fossil genus, *Cladoneura*, which closely resembles *Cladura*, and may well have been its immediate ancestor.

The wing appears larger and broader, the veins more separated, generally speaking. The subcostal cross-vein is at the absolute tip of the auxiliary vein. The tip of the wing is represented in the figure as missing, but the end of the 1st longitudinal vein can be plainly seen, and it is shorter than in *Cladura*, running straight to the wing-margin; the marginal cross-vein being placed shortly after the fork of the 2nd vein, which forking takes place just opposite the tip of the auxiliary vein. The praeurca originates at one-third of the length of the wing, and is nearly as long as the remainder of the vein, and nearly in a line with the 3rd vein, which ends much below the tip of the wing, in which latter peculiarity it differs from *Cladura* and my two new genera, in all of which it ends exactly at the tip of the wing or immediately below it. Discal cell pointed at proximal end, the anterior cross-vein joining the 3rd vein immediately after its origin, and the lower end of it situated at one-third of the discal cell. Anterior branch of 4th vein simple, parallel with the 3rd vein; lower branch widely forked soon after the cross-vein which closes the discal cell. The discal cell is composed of a proximal triangle combined with almost a distal square; four sided: the whole upper side forming a slightly curved line, the lower side two lines; the outer side is the discal cross-vein, upright; the posterior cross-vein placed at the angle formed by the two lower sides of the discal cell. The 5th vein bent considerably at its junction with the cross-vein; the 6th vein nearly straight; the 7th gently bisinuate. Between the 6th and 7th is shown what is apparently a spurious vein of some length, entirely disconnected.

PARACLADURA, mihi, gen. nov.

Allied to *Cladura*, Os. Sac. Type *P. gracilis*, mihi, sp. nov.

Two submarginal cells, five posterior cells, a discal cell.

Differing from *Cladura* in the face being *distinctly though not conspicuously gibbose*. The antennae are of a totally different construction altogether; the scapal joints both being *very short*, subglobular, no longer than broad, whilst the flagellum is composed of *fifteen* joints, a very unusual number throughout the family Tipulidae. All the joints are *very elongated*, minutely pubescent. The whole antenna if bent backwards would reach the basal segments of the abdomen.

The venation affords several very marked differential characters. The *subcostal* cross-vein is situated *a long distance before the tip of the auxiliary vein*, only a short distance beyond the base of the 2nd longitudinal.

The auxiliary vein ends gradually in the costa at about two-thirds the length of the wing. The 1st longitudinal vein is very long, following the line of the costa nearly to the tip of the upper branch of the 2nd longitudinal vein, and parallel to that section of that vein; thus ending itself much nearer the tip of the wing than is usually the case.

The subcostal cross-vein is placed near the middle of the wing, joining the auxiliary vein to the 1st longitudinal not very far beyond the beginning of the 2nd vein.

The 2nd vein commences almost before the first third of the wing, at a moderate angle, forking just opposite the tip of the auxiliary vein, the branches practically parallel; the praefurca longer than the lower branch, which itself is rather longer than the upper one.

Marginal cross-vein just beyond the fork, and a little beyond the tip of the auxiliary vein. The 3rd vein originates a little before the fork of the 2nd vein in an almost punctiform manner, meeting the anterior cross-vein at the same point. The 3rd longitudinal vein runs straight to immediately below the wing-tip. Anterior cross-vein of moderate length, meeting the discal cell before its middle, which cell is pointed at its proximal end. Upper branch of 4th longitudinal vein forked at half that portion of it lying beyond the discal cell, the veinlets nearly parallel.

Lower branch of 4th vein acutely forked at middle of discal cell, the posterior cross-vein situated just beyond the fork. The 5th longitudinal bent at its union with the cross-vein; 6th vein nearly straight. *The seventh longitudinal vein remarkably short*, much less than half the length of the 6th vein, its tip bent down sharply to the wing-margin.

Paracladura gracilis, mihi, sp. nov.

♂ ♀. Darjiling. Long. $2\frac{1}{2}$ mm.

Head.—Eyes separated above by a frown wider than one-third the width of the head.

Face above antennae distinctly gibbous. Proboscis rather long, narrow, pale yellow, a little hairy; palpi, 1st joint pale yellow, 2nd, 3rd and 4th black. Antennae: scape pale yellow, slightly pubescent, joints very short, almost annuliform; flagellum of *fifteen very elongate joints*, closely but shortly pubescent, with one or two longer hairs at the tip of each.

Thorax considerably gibbous, uniformly pale yellow, quite bare. Scutellum, metanotum and sides of thorax concolorous.

Abdomen brownish yellow, a little pale hair at the sides, segments in the ♂ towards the tip of the abdomen, both above and on belly, with more or less distinct blackish irregular marks.

Genitalia in ♂ rather longer than usual, especially the second joint, which is nearly as long as the first, the latter being less robust than usual, the second equally fleshy, subcylindrical, pointed, both bearing numerous soft hairs. Some further appendages are visible below the claspers, also a large ventral V-shaped dark brown plate. The upper plate is also dark coloured, narrow. In the ♀ are a pair of moderately long lateral valves, blackish at the tip; below these, a pair of pale yellow soft, hairy, short, conical appendages, apparently a pair of small claspers.

Legs uniformly very pale yellow.

Wings.—Venation in accordance with the generic description. Very pale yellowish, unmarked, veins yellow.

Halteres yellowish, knobs a little dusky.

Described from a single specimen of each sex taken by me at Darjiling, 28 and 29-v-10.

GEOGRAPHICAL DISTRIBUTION.—Darjiling.

Types in the Indian Museum.

Paracladura elegans, mihi sp. nov.

♀. Darjiling. Long. 2—3 mm.

Head rather bright yellow. Frons fully one-third the width of the head. Face above antennae gibbous. On the vertex a blackish streak joining the upper angle of the eyes. Proboscis yellowish; palpi blackish, pubescent, basal half of 1st joint yellowish. Antennal scapal joints very short, pale yellowish, with a few hairs, flagellum blackish brown, closely and shortly pubescent.

Thorax almost wholly brownish yellow; a trace of a dusky median stripe. Scutellum, metanotum and sides of thorax concolorous.

Abdomen brown, hind margin of the distinctly emarginated segments very pale yellow; pale hairs at the sides. Belly similar. Ovipositor of moderate size, resembling that of *P. gracilis*.

Legs pale brownish yellow.

Wings.—Venation in accordance with the generic description, the 7th longitudinal vein being only one-third as long as the 6th. Colour pale yellow, veins yellow, apical part of wing with slight pubescence.

A narrow blackish infuscation runs from the costa, beginning just beyond the tip of the auxiliary vein and passing over the marginal vein, the fork of the 2nd, the base of the 3rd and the anterior cross-vein. The infuscation, here shortly interrupted, is resumed on the posterior cross-vein and along the last section of the 5th longitudinal vein to the wing-margin. Halteres yellowish, clubs dusky.

Described from two ♀ ♀ taken by me at Darjiling, 26 and 29-v-10.

GEOGRAPHICAL DISTRIBUTION.—Darjiling.

Type (and second specimen) in the Indian Museum.

NOTES.—Whilst portraying all the generic characters, this species is easily distinguished from the previous one by the light but very distinct infuscation running across the middle of the wing.

CLADUROIDES, mihi, gen. nov.

Allied to *Cladura*, Os. Sac., and *Paracladura*, mihi. Type *C. fascipennis*, mihi, sp. nov.

Two submarginal cells, five posterior cells, discal cell open.

Antennae practically normal in the scape, which consists of the usual elongate cylindrical 1st joint and a shorter broader

2nd joint, but the flagellum shows a distinct peculiarity in possessing the unusual number of *thirteen joints*, oval and well separated, with minute pubescence and with verticils. Face above antennae prominent as in *Paracladura*. Thorax equally gibbous as in that genus.

In venation the present genus is also distinctly characteristic. The 1st longitudinal vein is shorter than in *Cladura*, the marginal cross-vein being at its exact tip, where it turns up into the costa somewhat abruptly. The subcostal cross-vein is at one-third the length of the wing as in *Paracladura*, situated a great distance from the tip of the auxiliary vein, and a considerable distance before the origin of the 2nd vein, which takes place in the middle of the wing. Discal cell open, pointed at proximal end, coalescent with 3rd posterior cell. Anterior branch of 4th vein forked acutely and widely near its tip, the 2nd posterior cell being triangular, not elongate bell-shaped.

Posterior cross-vein situated just beyond the proximal end of the 2nd posterior cell; the posterior branch of the 4th vein similarly forked as in *Cladura*.

The 7th longitudinal vein normal, as in *Cladura*.

Claduroides fascipennis, mihi, sp. nov.

♂ ♀. East and West Himalayas. Long. ♂ $3\frac{1}{2}$, ♀ $5\frac{1}{2}$ mm.

Head grey. Frons one-fourth the width of the head, considerably convex. Proboscis brown, palpi blackish. Antennae dark brown; 1st scapal joint subcylindrical, wider at tip, 2nd shorter, elongate oval, narrower at base: *flagellum of thirteen oval joints*, the first the longest, all very distinctly separated, with close pubescence and a verticil of longer hairs each.

Thorax distinctly gibbous and high; the short neck placed at the lowest point of the under side (seen best in profile). Thorax, including dorsum, scutellum, metanotum and sides, mainly dark grey, the dorsum in one specimen with a moderately wide blackish brown stripe from anterior margin to suture. A blackish brown smaller mark on each shoulder connected by a very thin line on the anterior margin. Two small stripes in front of the suture, with two spots behind it, irregularly shaped, of the usual nature, occupying most of the post-sutural dorsum. Scutellum somewhat produced and thickened; metanotum a little brownish. Sides of thorax grey.

Abdomen dark blackish brown, emargination of segments distinct: some pale hairs at the sides, belly similar. Genitalia in ♂ blackish brown, a little pubescent, composed of an upper plate, a pair of claspers, with a second pair of appendages below. The ♀ ovipositor barely thickened at the base, terminal valves reddish brown.

Legs.—Coxae slightly brownish grey dusted; remainder of legs brownish yellow, tarsi darker.

Wings.—Venation in accordance with generic description. Pale grey. A small pale blackish brown spot on the costa, near the subcostal cross-vein; another over the base of the 2nd vein; a large oblong stigmatic spot, ending at the marginal cross-vein, proximally continued along the cross-veins narrowly but uninterruptedly to the 5th longitudinal vein, along which the colour runs to the hind margin of the wing. Tips of all the veins (except the 3rd and 6th) and the bases of the forks of both branches of the 4th longitudinal, slightly infuscated. Halteres yellowish.

Described from three ♂♂ and two ♀♀ in the Indian Museum with the following data: Darjiling, 9-viii-09, type ♂ and ♀ taken by Mr. Paiva, and an additional ♂ and ♀ taken by Dr. Annandale at Phagu, 12-v-09, and Kurseong, 7-ix-09, respectively.

Claduroides sordida, mihi, sp. nov.

♂ ♀. East and West Himalayas. Long. 4—5 mm.

Head dark grey, with scattered hairs. Proboscis brownish yellow; palpi dark brown. Antennae brownish yellow; scapal 1st joint cylindrical, moderately long, 2nd shorter and broader as usual; *flagellum of thirteen oval joints*, diminishing in size towards the tip, the first being distinctly but not conspicuously larger than the rest.

Thorax dark grey, no obvious marks on dorsum, though the impression is given that in some specimens there may be indistinct stripes. Scutellum and metanotum similarly coloured; sides of thorax with a very slight brownish tinge.

Abdomen dark brown. Genitalia in ♂ consisting of a pair of rather large brownish yellow claspers with small, narrow horny appendages towards the tips: a narrow dorsal plate. In ♀ ovipositor as in preceding species.

Legs brownish yellow, darker towards tarsi tips.

Wings.—Venation in accordance with the generic description, pale grey, iridescent. An elongate blackish stigma is indistinctly but obviously present over the tip of the 1st longitudinal vein, ending rather sharply at the marginal cross-vein. Halteres brownish.

Described from two ♂♂ and one ♀. The type ♂ and ♀ taken respectively at Simla, 10-v-09, and Kurseong, 4-ix-09, by Dr. Annandale; an additional ♂ from Simla, 12-v-09.

Type ♂ and ♀ (also additional ♂ referred to) in the Indian Museum.

The MONGOMA group.

It seems necessary to establish two new genera in connection with the species hitherto referred to *Mongoma*, Westw., based on

apparently well-defined differences in the venation. These genera may be characterized as follows:—

Table of genera.

Four posterior cells¹ (anal cell closed, 3rd longitudinal vein present; discal cell present) .. MONGOMA, Westw.
(*sensu str*)

Three posterior cells.¹

Anal cell open; 3rd longitudinal vein either absent, in consequence of the punctiform contact of the 2nd longitudinal vein with the discal cell (*albitarsis*), or very short (*pallida*); discal cell present .. PARAMONGOMA, gen. nov.

Anal cell closed; 3rd longitudinal vein present; discal cell absent .. MONGOMIOIDES, gen. nov.

As *fragillima*, Westw., was the original type of *Mongoma*, Westw., that species must, of course, remain the type of the restricted *Mongoma*. Two other Oriental species belong here also, *tenera*, Os. Sac., and *pennipes*, Os. Sac., the former from the Philippines and India, the latter from Borneo, India and Ceylon. The Australian species *australasiae*, Skuse, is a strict *Mongoma*, and a new species from India will be described by me later.

Of *Paramongoma* I designate *albitarsis*, Dol., the type; the two North American species *manca*, Will., *pallida*, Will., being I think congeneric.

Mongomioides is represented by *trentepohlii*, Wied., as the type, with *exornata*, Bergr., as an African species, to which I shall later add three new species from India.

These species comprise all the known ones previously referred to *Mongoma* and they all conform with considerable exactitude to one or other of the three forms of venation herein described.

N.B.—Mr. Edwards resurrects Bigot's genus *Trentepohlia* to take the place of *Mongoma*, but this genus cannot stand, being insufficiently characterized: in fact, its simple inclusion in a table with such incongruous material as *Dixa* (a separate family), *Ptychoptera* and *Dolichopeza* (the latter appearing a second time as *Apeileisis*), both representing totally different subfamilies; with such genera as *Anisomera*, *Ula*, *Erioptera* (as *Octavia*), each belonging to a different section of Limnobiinae, and finally with "*Zigoneura*" (= *Zygoneura*, Mg., belonging to the Mycetophilidae!), is most certainly no characterization whatever. Moreover, the nomination of a type species in itself does not constitute a generic diagnosis.

¹ As regards the names of the posterior cells it must be remembered that, technically, as the anterior cross-vein is wanting, the *first posterior cell is absent*, and that the uppermost of the posterior cells, whether four or only three be present, is, strictly speaking, the *second*, and not the first. This view is confirmed by Williston.

Notes on **MONGOMA, PARAMONGOMA** and
MONGOMIOIDES.

Including the three new ones herein introduced, seven species have been recorded from the East, all of which, except *albitarsis*, Dol., occur in India. This latter, described from Java, and apparently not recognized since its discovery, may very likely be found in South India, Ceylon or in some parts of the Malay Peninsula.

The genus is highly interesting as presenting one of the most conspicuous variations from the normal type of venation in this family. Previous to describing the genus Prof. Westwood wrote to Osten Sacken for his opinion, and the latter's reply is indicative of its abnormality in his words: "The systematic position of this species (*M. fragillima*) is very puzzling . . ." He pointed out that the apparent resemblance between its venation and that of *Paratropesa*, Sch.,¹ was only superficial and that it was certainly a new genus.

Westwood's figure of the original species, *fragillima*, from Central Africa, is excellent, and distinctly portrays the distinctive features of the genus: the long auxiliary vein ending only just before the tip of the 1st longitudinal; the wide forking of the 2nd vein which, with the marginal vein, gives a first impression of the marginal cell being divided by two cross-veins into three portions; *the merging of the 3rd longitudinal vein in the 4th*² at the upper basal corner of the discal cell, thereby causing the *absence of the anterior cross-vein*; the abrupt curve downwards of the end of the 5th vein, closing, in most cases (speaking *sensu lato*), the anal cell; the shortening of the two basal cells and the very short 7th vein, all characteristic features of this singular genus.³

Even Osten Sacken, than whom I consider no better authority in Tipulidae has existed, recognized the difficulty in allotting to the veins their correct names (Berl. Ent. Zeits., xxvi, 90), and in describing his first new species in the genus, *tenera*, from the Philippine Islands, he says in a footnote (referring to the words "the presence

¹ For description of *Paratropesa* see Verh. zool.-bot. Ges. Wien, xvi, 932 (1866).

² This view is in accord with Williston's opinion (Tr. Ent. Soc., 1896, p. 292) but I only recently saw this author's paper, long after I had studied the question personally. It is satisfactory to find my resultant view coincides with that of so good an authority as Prof. Williston.

³ Of course, if the short vein joining the 2nd vein with the discal cell (or the corresponding part of the 4th vein when the discal cell is absent) be considered the anterior cross-vein instead of the 3rd longitudinal vein, it follows that there would be only one submarginal cell in any of the three genera concerned, and the cell exterior to the anterior cross-vein will become the 1st posterior cell. This would give *Mongoma* five posterior cells, and *Mongomioides* and *Paramongoma* four posterior cells each. In support of this suggestion it may be urged that the 3rd vein is not known elsewhere to terminate in the interior of the wing. Personally I know of no case where it does so, but it must be remembered that excessive abnormalities are not rare in Tipulidae. It may also be urged in analogy that in *Sciara*, a very extensive and dominant genus in Mycetophilidae, the anterior cross-vein invariably takes a longitudinal position.

To my thinking, however, the vein has every appearance of the 3rd longitudinal vein by its manner of origin, its superior length to the usual anterior cross vein, and the cell concerned has much more the appearance of a submarginal cell than of that of the 1st posterior cell.

In connection with this point, *conf.* footnote 1, p. 294.

of the two cross-veins inside the marginal cell" used in the text): "I call them cross-veins merely for shortness' sake, because one of them may also be considered as a branch of the 2nd vein." He spoke of the genus as representing "a form of venation which is of very rare occurrence among diptera, and we must suspend our judgment on this point¹ until we have an opportunity of seeing the insect from Java described by Doleschall."

At this time he was accepting three species as congeneric, *fragillima*, Westw., *albitarsis*, Dol., which it is evident from the above quotation he had never seen, and his new species *tenera*. In pointing out the difference of Doleschall's species only having three posterior cells instead of four, as in *fragillima* and *tenera*, it is obvious that he was guided by Doleschall's figure alone. The Dutch author's remark "two marginal cells" does not help in the question of terminology.

Osten Sacken, in the paper quoted, notes the relationship of the three species he treats of, with "*Limnobia*" *trentepohlii*, W., of which Wiedemann gives a not very good figure of the wing (Auss. Zweifl., i, pl. vi b, 12). Here again Osten Sacken speaks of the marginal cell being divided by two cross-veins, thus leaving only three posterior cells; he notes the open discal cell and the abruptly curved 5th vein. In his invaluable work "Studies on Tipulidae," ii (Berl. Ent. Zeits., xxxi, 203, 1887), he recognizes that the 2nd longitudinal vein is forked, the obliquity of the upper branch giving it the appearance of a cross-vein; he also notes the position of the marginal cross-vein, the full contact of the second sub-marginal cell with the discal cell "so that there is no anterior cross-vein," and other points of generic importance. In the same work he describes a species, *pennipes*, from Borneo; reiterates that the apparent resemblance between the venation of this genus and that of *Paratropesa*, Sch., is only superficial, not being in any way supported by the structure of the rest of the body; and for the first time relegates *Mongoma* to its natural position, very near *Gonomyia* and its allies.

Coming to non-Oriental species, four others have been recorded, *manca*,² Willis., and *pallida*,³ Willis., from North America and the West Indies; *australasiae*,⁴ from Australia, and *exornata*,⁵ from Africa . . . A brief study of the wings of the two American species shows characters in common with *albitarsis*, the presence of only three posterior cells and a widely open anal cell. Apart from the question of the length of the auxiliary vein, which is illustrated as very short in Doleschall's figure,⁶ these three species may be regarded as certainly congeneric. There is, however, assuming

¹ *i. e.*, the correct identification of the veins.

² For figure of wing see Needham, N. Yk. State Mus. Bull. No. 124, pl. xxi, 6 (1897).

³ Figured in Tr. Ent. Soc. Lond. (1896), pl. x, 67.

⁴ Skuse, Pr. Linn. Soc. N. S. Wales (2), iv, 834, pl. xxii, 17, xxiv, 59 (*Trentepohlia*) (1890).

⁵ Bergr., Entom. Tidskr., ix, 135, pl., fig. 3 (*Trentepohlii*, *id.*).

⁶ The costal part of the wing does not agree with the other species, but may have been difficult to examine, from the tendency of the costal border in many species after death to curl over, and therefore too much importance must not be placed upon the apparent abnormality in Doleschall's figure, in which, moreover, no 7th vein is shown, which must surely be an omission.

Doleschall's figure to be correctly drawn, a point of discrepancy, which, nevertheless, as a similar variation occurs in *Gonomyia*, may not be regarded as of generic distinction. In *albitarsis*, the contact of the upper basal corner of the discal cell with the 2nd longitudinal vein is punctiform, so that there is *neither 3rd longitudinal vein nor anterior cross-vein*. This is the only species in which I have noted this extraordinary feature. In *manca* and *pallida*, as in all other species, what I am compelled to regard as the 3rd longitudinal vein is always short, but always of quite a reasonable length, merging in the 4th vein at the upper basal corner of the discal cell, and at about the same spot in the 4th vein, when the discal cell is absent.

Regarding the correct terminology it might have been assumed in studying the wing of, let us say, *trentepohlii*, that the 3rd longitudinal vein was continued to the wing-border, forking soon after quitting the 2nd vein; that the anterior cross-vein was present, and that the 4th longitudinal vein was simple; but on comparing this wing with *Mongoma*, *sensu stricto*, it becomes obvious that such a suggested anterior cross-vein is in both types of wing the normal base of the discal cell, the closed or open nature of this cell not affecting the question. Adopting this view, the 3rd longitudinal vein is restricted to a comparatively short length, the anterior cross-vein is then seen to be absent, and in the case of *albitarsis*, as before noted herein, the discal cell is formed at the very juncture of contact with the 2nd vein, thus, in this species, obliterating the 3rd vein altogether as well as the anterior cross-vein.¹

¹ It seems advisable here to make reference to the genus *Paratropesa*, Sch., a genus which Osten Sacken considered not to be allied to the *Gonomyia* and *Mongoma* group, in spite of its apparent affinity by virtue of a somewhat similar venation. Subsequently, in his "Studies on Tipulidae" he confirmed this lack of real affinity, yet, although I have not seen any specimen of it, a study of the wing, as figured by Schiner, convinces me of its real kinship, and this view is supported by the position it holds in Prof. Kertész's recent catalogue of Diptera.

The genus is quite likely to be found within the geographical region embraced by this volume and therefore a few notes on the terminology bearing important references to *Gonomyia* and *Mongoma* may not be out of place. The 2nd longitudinal vein starts before the middle of the wing in a very wide sweep, forking widely close to the wing-tip; the upright marginal cross-vein placed at about the middle of the praefurca joining the 1st vein some distance before its tip.

Posterior to the 2nd vein there is only a cross-vein, in a direct line with the marginal cross-vein connecting the 2nd vein with the discal cell. The rest of the veins are more or less normal, though rather widely separated.

The point, however, to which attention is called, is the short upright cross-vein joining the 2nd vein and the discal cell. In *Mongoma* there is a short *very oblique* vein at this point which I term the *3rd longitudinal vein*, losing itself in the 4th vein, the anterior cross-vein being absent. In *Paratropesa*, this *upright* short cross-vein seems to assert itself self-evidently as the *anterior cross-vein* and *not* as the beginning of the third vein. This being so, it is to be understood that I recognize in *Mongoma* a short oblique 3rd vein merging in the 4th vein, the anterior cross-vein being absent; and in *Paratropesa* an upright anterior cross-vein joining the 2nd vein to the discal cell, the 3rd vein being absent. It is so seldom that either the 3rd vein or the anterior cross-vein is absent that it is difficult to decide which should be considered of the more anatomical value; personally I think at first sight the latter.

The value of the exact position of the posterior cross-vein is not of primary importance, as not only in the closely allied genus *Gonomyia*, but in other genera throughout the family, the position of this vein is not by any means precisely constant even in the same species.

Osten Sacken emphasizes "No empodia and no spurs" in his generic notes, but observes that in some *Gonomyiae*, as well as in the allied genus *Lipsothrix*, the empodia are wanting.

The seven Indian species before me fall easily into the genera *Mongoma* and *Mongomioides*, three in the former and four in the latter.

MONGOMA, Westw.

Type of genus *M. fragillima*, Westw. (from Tropical Africa).

pennipes, Os. Sac., ♂ ♀. Described from Borneo, but it occurs in India and Ceylon in both of which it is apparently widely distributed. Meijere records (*Tijd. v. Ent.*, liv, 50) that Jacobson bred the species from rotten vegetable matter in Java. In the Indian Museum from India and Ceylon. Dr. Brauer of the Berlin Museum informs me that the type therein preserved is still in good condition. Mr. Edwards records it recently from two localities in Ceylon.

tenera, Os. Sac., ♂ ♀. Philippines. Two ♂ ♂ and a ♀ in the Indian Museum from South India and the base of the Himalayas can hardly fail to be this species. One specimen in the Vienna Museum.

Type (a unique ♂) presumably in the Osten Sacken collection.

PARAMONGOMA, mihi, gen. nov.

Type of genus *Cylindrotoma albitarsis*, Dol.

Mongoma id., Wulp, et auct.

This genus differs from *Mongoma*, Westw., only in the venation, principally in the (*typically*) punctiform contact of the 2nd longitudinal vein with the discal cell, thus *obliterating the 3rd longitudinal vein* (*albitarsis*, Dol., generic type); or the presence of only a very short 3rd longitudinal vein. The discal cell emits only three veins (arguing from analogy and comparing the wing with that of *Mongoma*, it should be the anterior branch of the 4th longitudinal vein that is forked), thus making *only three posterior cells*, the first and second of which are of equal length, with pointed bases.¹ The anal cell is open, somewhat narrowly but distinctly.

¹ *Vide* footnote 1 on p. 291.

Two North American species come in *Paramongoma*—*pallida*, Will., and *manca*, Will., both described under *Mongoma*.

Both differ by the presence of a short 3rd longitudinal vein, of about the length of that in *Mongoma pallipes*, Os. Sac., the contact between the 2nd longitudinal vein and the discal cell not being punctiform. As the length of the 3rd longitudinal vein varies in different species, I think these two with very short ones may be included in *Paramongoma*, the remainder of the venation being practically identical. In *manca* a further (comparatively minor) difference is apparent by the marginal cross-vein joining, not the praefurca as usual, but the *upper* branch of the 2nd longitudinal vein,¹ thus making the 1st submarginal cell nearly square.

The only Oriental species definitely referable to *Paramongoma* is *albitarsis*, Dol.,² described from Java, but *australasiae*, Skuse, is certainly congeneric.

albitarsis, Dol. (*Cylindrotoma*). Amboina.

I have never met with this, nor seen it recorded since the foundation of the species, nor is the location of the type ascertainable.

MONGOMIOIDES, mihi, gen. nov.

Type of genus *Limnobia trentepohlii*, Wied.

Differs from *Mongoma*, s. s., by possessing only *three* posterior cells instead of four, and by the discal cell being *absent*. It agrees with *Mongoma* in the presence of the 3rd longitudinal vein, and in the anal cell being closed at a greater or less distance before the border. The marginal cross-vein (in the four species known to me) is more distad than in *Mongoma*, and the first section of the 2nd longitudinal vein (*i.e.*, that portion up to the origin of the 3rd vein) is shorter than in *Mongoma*, not longer than one-third the length of that vein. Upper branch of 4th longitudinal vein nearly straight or gently curved: posterior cross-vein distinctly, but not much, before the fork of the 4th longitudinal vein. (This may be found a variable character, when additional species are discovered.) Remainder of venation and all other characters as in *Mongoma*.

¹ Williston (Tr. Ent. Soc. Lond., 1896, p. 292) includes this amount of variation in the position of the marginal cross-vein, in the generic diagnosis.

² Doleschall's figure is rather slovenly drawn, as the 1st longitudinal vein is shown emerging from the auxiliary vein near its tip; the 2nd vein is straight, after the bend, which takes place at the exact corner of the discal cell, there being *neither 3rd longitudinal vein nor anterior cross-vein*. There are only three posterior cells, of which the first two are subequal, with obtuse pointed bases: the posterior cross-vein is a little beyond the base of the discal cell, which is about twice as long as broad. The anal cell is open; apart from this, the 5th and 6th veins bear the same relation to each other as in *Mongoma*. The 7th vein is not shown, perhaps due to the full insect being illustrated, with the wings rather close to the body; in this position the 7th vein would be easily obscured by the proximity of the wing to the abdomen.

trentepohlii, W., ♂ ♀ (*Limnobia*). Described originally from Sumatra, this species is common in different parts of India, Burma and Assam, including Calcutta, and is probably generally distributed throughout the East. Meijere has it from Java and Mr. Edwards records it recently from two Ceylonese localities.

Type in Dr. Trentepohl's collection, presumably at the Vienna Museum.

Three new species from India in the Indian Museum will be described by me later.

Mongoma exornata, Bergr., from Africa is a true *Mongomioides*.

STYRINGOMYIA, Lw.

First described by Loew in 1845 (Dipt. Beit., i, in "Zu der öffentlichen Prüfung der Schüler d. Königl. Fried. Wilh. Gymn. zu Posen," p. 6) from a specimen in amber, it was for many years considered an extinct genus. The late Baron Osten Sacken, in his Monograph of the North American Tipulidae Brevipalpi (p. 102), describes a second species (without naming it) from a piece of copal from Zanzibar. He figures a wing, copied from Loew's figure, and characterizes the genus, adding from Loew's original description such details as were not distinctly visible in his own species. He suggested, but did not assume the relationship of the genus to *Toxorhina*. Later on (1887) the same author, in his historical "Studies on Tipulidae," ii (Berl. Ent. Zeits., xxxiii, 185), records the existence of recently captured specimens from Caffraria taken by Wahlberg, in the collection of the Stockholm Museum. Needham (New York State Museum. Bulletin 124, pl. xxvi, 6) reproduces an enlarged figure of Osten Sacken's copy of Loew's wing. Prof. Kertész in his exhaustive catalogue of the world's diptera, now in progress of publication, does not mention the genus, from which I presume the Caffraria specimens were not named. Loew's original species was *S. venusta*, ♀.

Incidentally it may be noted that there exists another genus with a very similar name—*Steringomyia*, Pokorný—erected in 1889 (Verh. zool.-bot. Ges. Wien, xxxix, 568) for a single species from the Alps allied to the genus of Muscidae, *Cynomyia*, Rob. Desv.

I had hoped to introduce this genus to the East by the description of three species in the Indian Museum collection from Nepal and South India but am forestalled by Meijere's discovery in Java of Grimshaw's *S. didyma*, described from Hawaii recently. Dr. Meijere places the genus in the Rhamphidini, but it seems to me much more nearly related to the *Gonomyia* group, with *Mongoma*, *Lechria*, and the closer allies of *Gonomyia*. Mr. Edwards also describes the following species from Ceylon.

ceylonica, Edwards, Ann. Mag. Nat. Hist. (8), viii, No. 43, 58, ♂ (1911).

Described from a single ♂ in the British Museum from Weligama, Ceylon, 9-ii-08 [T. B. Fletcher].

Styringomyia ceylonica, Edwards.*Redescription.*

♂ ♀. Base of Himalayas and Bengal. Long. 3—6 mm.

Head, and the rather short, blunt proboscis, yellowish; the wide frons bearing several strong long bristles. Eyes black, almost contiguous below the head, for a short space. Antennae yellowish, with somewhat sparse, moderately long hairs; scape brown, 1st joint elongate, 2nd wider at tip; flagellum of fourteen oval joints, narrowing in size towards tip. Palpi yellowish, with some hairs, 4-jointed, each of about the same length, the 1st rather the shortest, the 4th slightly the longest, with a blackish tip which is sometimes bent at a right angle; 2nd broadest, and widening towards tip, which is black.

Thorax.—Neck moderately long, with strong black bristles on upper side. Thorax brownish on upper half, yellowish below, with two irregular rows of short bristles, separated by a rather wide median space. Some bristles on the sides, and a long one on each posterior callus and two in each humeral region. Scutellum and metanotum brown, bare.

Abdomen about three times as long as the thorax, linear, consisting of the usual short basal segment, and six other longer ones of about equal length, moderately pubescent. Variable in colour; in ♂ mainly dirty yellow with posterior borders of segments a little blackish, or with an indistinct dorsal stripe; in ♀ dark brown. Genital organs in ♂ prominent and highly complicated, consisting of two large (wider than the terminal abdominal segment) basal segments, the 2nd pointed above posteriorly. This latter segment bears a pair of large subchitinous claspers of which the upper arm of each is bluntly conical, terminating in a black sharp elongated point; the lower arm being attenuated, elongated, nearly transparent, apparently flexible and terminating in a very long black filamentous bristle. Below this upper pair of large claspers is a second, much smaller pair, the upper arm of each being bifid and stout, the lower arm longer, comparatively thin, and ending in a small expansion bearing four blunt strong teeth, there being two small black spines at the middle of this lower arm. Between this lower pair of claspers is a small bristly organ, apparently the penis, and below all the organs is a rather large ventral plate.

In the ♀ they are also large and complicated, consisting of a pair of nearly perpendicular sheaths, terminating in filamentous points, and enclosing two internal lamellae and two bristly fleshy organs, the whole being supported below by a ventral plate which possesses a small appendage towards the tip, below. In both sexes the genital organs are conspicuous and large, generally concolorous or a little lighter in colour than the abdomen.

Legs mainly yellow, with black rings, pubescent. Coxae rather strong, trochanters rather well developed, half as long as coxae. Fore coxae with some strong bristles on upper side; all coxae with scattered short hairs.

Fore femora with a few long hairs (longer than the general pubescence): middle femora with an irregular row of short bristles on upper and anterior sides, including several rather longer ones placed near together towards the tip of the anterior side: hind femora with four rows (one on each side, also above and below) of long soft hairs: all the femora distinctly broader at tip than at base. Fore tibiae with a row of 5 or 6 long, equidistant bristles on front side, and a row on the outer side: middle tibiae with a row of 5 or 6 bristles on *hinder* side, and a row of 5 or 6 on outer side: hind tibiae with a row of 10 or 12 stronger stiff hairs on hinder side, and a row of 5 or 6 stiff long hairs on outer side, in addition to rows of longer, soft hairs, which are also in addition to the general pubescence. All the tarsi with some longer hairs; hind metatarsus, which is as long as the rest of the tarsus, with a row of 5 or 6 pairs of diverging bristles on outer side; 2nd, 3rd and 4th tarsal joints with some longer hairs in sets of from two to four, on outer side; claws black.

In coloration, all the femora have two blackish rings on apical half, the tips also being narrowly black; the tibiae have a narrow ring in the middle and a rather broad one at the tip; all the tarsal joints are black tipped, all these rings on the legs being variable in width and still more so in intensity.

Wings clear grey; considerably iridescent; costa very shortly bristly, quite bare at base, posterior margin of wing with soft short hairs, longest at base of wing and shortest towards tip of wing. 1st longitudinal vein with a row of distinct, rather long bristles throughout its entire length; deflected suddenly downwards near its base, shortly afterwards merged in the costa, just after the origin of the 2nd longitudinal, which, at about half the distance from its origin to the wing-tip, turns up almost at right angles to the costa. The 3rd longitudinal springs from this angle and is nearly straight. The anterior cross-vein very short, placed very near base of 3rd longitudinal, united to upper basal corner of discal cell. The upper branch of the 4th vein is forked, the two prongs divergent; lower branch simple. Discal cell practically rhomboidal, twice as long as broad, rather broader at apical end; posterior cross-vein exactly below middle of discal cell.

The 5th and 6th longitudinal veins are nearly straight, 7th bristly at the base, rather more than half as long as 6th, sharply curved near its tip towards the border.

A slight brownish suffusion over the anterior cross-vein, the outer side of the discal cell, and the posterior cross-vein. Halteres dirty yellow; knobs blackish.

Described from a pair in the Indian Museum taken *in cop.* at Sukhwani, Nepal, 15—16-ii-08, a pair taken by Dr. Annandale at Sukna, Darjiling district, 1-vii-08, and from other specimens.

N.B.—The above description was written some months before the publication of Mr. Edwards's *ceylonica*, under the assumption it was a new species. Being drawn up from a series of more than a dozen specimens representing both sexes, it seems advisable not

to withdraw it. The species shows considerable variation, and a form which I had intended to describe as a variety has the wings more yellowish, the veins paler and the tip of each one very slightly but distinctly darkened at the wing-margin. In the Indian Museum are one ♂ and three ♀ ♀ from Sukna (500 ft.), 1-vii-08; Puri, Orissa, 22-x-08 [both *Annandale*]; and Calcutta, 9-xii-07. I took it at first for a "plains" variety of my supposed new species, but intermediate individuals connect it with the typical form.

The precise mathematical distinctions appertaining to the bands on the legs, as given by Mr. Edwards, do not hold good, as they exhibit considerable variation.

Styringomyia obscura, mihi, sp. nov.

♂. Nepal. Long. 5 mm.

Head.—Frons brownish yellow, antennal scape dark brown, flagellum (of fourteen oval joints) yellowish, pubescent, palpi dark brown, pubescent. Proboscis brown. Back of head light reddish brown, with some bristly hairs.

Thorax.—Neck (with strong bristles), dorsum of thorax, scutellum and metanotum, uniformly dark brown; traces, on hinder part of dorsum, of a pale median line, extending over the scutellum and metanotum. Two rows of dorsal bristles as in *ceylonica*, and a few bristles above and in front of the wings. Sides and lower part of thorax brownish yellow.

Abdomen moderately dark brown, minutely pubescent, blackish towards tip, emargination of segments black; belly concolorous

Genital organs conspicuous and large, consisting of a rather large upper part, with two small terminal lamellae bearing long hairs; a pair of large fleshy claspers and a pubescent ventral plate, bilobed at tip.

Legs (middle pair wanting).—Coxae and trochanters reddish yellow, with some black hairs on anterior pairs, and yellow hairs on hind pair. Femora (fore pair distinctly but not greatly, thickened towards the tip) yellow; apical fourth black, and with a black ring in the middle which is very wide on the fore pair and moderately wide on the hind pair. Tibiae blackish brown, pale at extreme base. Fore tarsi blackish brown, hind pair yellowish white, claws black, apart from the minute pubescence of the whole legs. The only bristles are a row of weak ones on the outside of the hind tibiae, and on the lower side of the hind tarsi; a few stiffer hairs on fore tibiae.

Wings grey, unmarked, venation as in *ceylonica*, but the veins dark brown and much more distinct. Halteres black, stem brownish yellow.

Described from a single ♂ in the Indian Museum from Thamaspur, Nepal, base of Himalayas, 18—20-ii-08.

***Stringomyia flava*, mihi, sp. nov.**

♂. South India. Long. 5 mm.

Whole body mainly pale dirty yellow. 1st joint of scape dark brown on under side; flagellum of fourteen joints more elongated than in the other species. A strong long spiny bristle just above the wing, four small, dorso-central ones arranged in a curve, two long ones on the scutellum and a large one on each shoulder: also a strong one a little below each wing. Pleuræ with some minute bristles. Abdomen with rather longer soft pubescence. Posterior margins of abdominal segments with a moderately wide brown band, interrupted in the middle.

Genitalia concolorous, conspicuous. A pair of large pubescent fleshy claspers, each bearing at its end a long, filamentous semi-transparent tentacle and three strong black spines. On the inside of each clasper is a slightly prominent comb-like organ and also possibly a pair of lamellæ. Above, and almost between these large claspers is a smaller fleshy projecting pubescent organ. Below all is an onion-shaped ventral plate, which, as well as the whole genitalia, is covered with long bristly hairs.

Legs pale yellow, minutely pubescent, especially on the tibiae. Coxæ with bristles; femora with a faint trace of the two apical black rings as in *ceylonica*, fore pair barely enlarged at tip, with a row on upper and under sides of longer, stiff hairs. Posterior femora with rows of stiff hairs, mainly on upper and outer sides, but with a tendency to general distribution, especially on hind pair. Fore tibiae with some bristles on front side and a double row of more numerous ones on outer side. Posterior tibiae with bristles on outer and hinder sides. Tarsi with a few bristles below.

Wings distinctly pale yellow, very iridescent, quite unmarked; venation exactly as in *ceylonica*, and the costa with a distinct fringe of short bristly pale hair, which is nearly absent at the base, both on front and hind margins. Halteres pale dirty yellow.

Described from a single ♂ taken at light by Dr. Annandale, 22-xi-08, at Tenmalai, Travancore State, South India.

LECHRIA, Skuse.***Lechria bengalensis*, mihi, sp. nov.**

♂ ♀. Bengal. Long. 4 mm.

Head blackish grey, frons rather broad and flat, with short sparse hairs; proboscis yellowish, palpi dark. Antennæ black; 1st joint of scape long, 2nd short, both broader than the 14-jointed flagellum, which has traces of white at the tip of each joint and at the base of the 1st joint.

Thorax yellowish, well arched, mesonotal suture deep, posterior to which the colour of the dorsum is pale livid brown,

as is the scutellum ; metanotum blackish grey. Sides of thorax yellowish, pleurae a little white dusted.

Abdomen moderately dark yellowish grey, with short yellow hairs ; belly concolorous, genitalia in both sexes small, brownish yellow.

Legs brownish yellow, thin and long ; femora with some stiff black hairs at the tip which, if viewed from certain directions, give almost the appearance of two black spines ; tibiae unspined.

Wings clear yellowish grey, veins distinct. Auxiliary vein ends just beyond middle of wing, the subcostal cross-vein at its tip. The 1st longitudinal ends in the 2nd at the point where this latter vein forks. The 2nd vein originates at or just beyond the middle of the wing, at a sharp angle and turns at one-fifth of its length suddenly upward, forking beyond its middle, where it meets the tip of the 1st vein, the upper branch shorter than the lower one. The 3rd vein issues from the 2nd at the angle in the praefurca, the anterior cross-vein placed just before this point. The latter is of moderate length, placed over the middle of the discal cell which is in the middle of the wing, three times as long as broad, the proximal end pointed, emitting three nearly parallel veins to the wing-margin. Posterior cross-vein near base of discal cell ; 5th, 6th and 7th veins nearly straight.

Described from a ♂ and three ♀♀ dated respectively Pusa, 15-viii-08 (type ♂) ; Calcutta, 19-viii-07 (type ♀) and 18-vi-09 ; Pusa, 16-vii-10.

Type ♂ in Pusa collection, ♀ in Indian Museum.

NOTES.—The venation of this genus is distinctly abnormal, the only previously known species, *singularis* Skuse,¹ coming from Australia. The 1st longitudinal vein ends in the 2nd at the point where the latter forks widely, thus giving the appearance of two long veins crossing one another at an angle of 45°, the point of contact in *singularis* being punctiform. In my species the point of contact appears almost as a small cross-vein. Skuse's description of his genus not being accessible I have had to rely on Needham's figure (plate 19, fig. 5) copied from Skuse's work and there can be no possible doubt of the new species being congeneric at least as far as the wings go.

Prof. Kertész places *Lechria* in the Eriopterini near *Gonomyia*, to one species of which, *G. incompleta* mihi, it bears a remarkable resemblance in this part of the wing, and to which genus, *bengalensis* as a species at any rate, is eminently akin.

The only other possible interpretation of the wing as figured by Needham would be to consider the 1st vein as angled towards the tip and continuing to the wing-margin, meeting at the angle the 2nd vein, which in this case would be simple, not forked, thus making only one submarginal cell, which in its turn would necessitate the genus, theoretically at least, being removed to another

¹ With the exception of *lucida*, Meij., recently described from Java. Tijd. v. Ent., liv, 53, ♀ (1911).

section of this subfamily. Its position near *Gonomyia* seems hardly questionable.

N.B.—I had anticipated the pleasure of introducing this peculiar genus to the Oriental Region, but have been forestalled by the publication of Meijere's *lucida*.¹

GONOMYIA, Mg.

Of this genus Dr. Meijere introduces² two species from Java, *metatarsata* and *nubeculosa*. I have descriptions of several additional species from India, showing some important variations of venation, which prove Osten Sacken's remarks on the variability of this character in *Gonomyia*.

EMPEDA, Os. Sac.

gracilis, Meij. Tijd. v. Ent., liv, 49 (1911), pl. iv, 37, wing. The author states no sex. An additional species from Darjiling will be described by me later.

GNOPHOMYIA, Os. Sac.

Two Javan species are described by Meijere (*loc. cit.*), *orientalis*, ♂ ♀, and *ornatipennis*. The Indian Museum possesses about half a dozen undescribed species.

SYMPLECTA, Mg.

punctipennis, Meig., ♂ ♀. This common European species is to be found rather freely at Darjiling, the Indian Museum possessing a good series, identified by me.

ERIOPTERA, Mg.

Dr. Meijere introduces two species from Java,² *javanensis*, ♂, and *notata*, whilst I have descriptions of twelve others from different parts of the Indian Empire.

MOLOPHILUS, Curt.

One species from Java, *bicolor*, ♀, described by Meijere (*loc. cit.*, 45), the Indian Museum possessing two additional undescribed species.

¹ Since writing the above I have obtained a copy of Skuse's works and the species proves to be correctly placed in *Lechria*.

² Tijd. v. Ent., liv (1911).

DASYMALLOMYIA, mihi, gen. nov.

Head, thorax and abdomen of the normal Eriopterid type, with light conspicuous hair on thorax and abdomen. Eyes separated above by a hairy frons, less than one-third the width of the head, below contiguous for a short space.

Antennae missing, except the scape, which is normal but rather less in size, and the three basal joints of the flagellum, which also have every appearance of normality, rounded, verticillate.

Abdomen narrowed at base, widened beyond the middle; genitals of moderate size, normal.

Legs conspicuously pubescent throughout with moderately long hair.

Wings moderately broad, anal angle rounded but distinct, two submarginal cells, four posterior cells, discal cell open, coalescent with 3rd posterior cell. Auxiliary vein lies close to 1st longitudinal, ending at about the middle of the wing, the 1st longitudinal ending a little beyond. The 2nd longitudinal begins at one-third of the wing, forked; marginal cross-vein just before tip of 1st vein. The 3rd vein begins a little before the fork of the 2nd; the 4th forks close to the anterior cross-vein, both branches forked; posterior cross-vein just beyond fork of 4th vein; 3rd posterior cell pointed at base, 6th and 7th veins slightly sinuous.

GEOGRAPHICAL DISTRIBUTION.—Darjiling district.

NOTES.—Although this genus stands out as quite distinct from others it is difficult to define its peculiar characters.

Perhaps the robustness of the body generally (affording some general resemblance to *Teucholabis*), the narrowed abdomen near the base and specially the somewhat shortened, thickened, very hairy legs, are the best distinguishing features from *Gnophomyia*, Os. Sac., which seems to be its nearest eastern ally.

Dasymallomyia signata, mihi, sp. nov.

♀. Darjiling district. Long. $7\frac{1}{2}$ mm. to tip of ovipositor.

Head.—Frons forming one-fourth the width of the head; grey, with some long, rather shaggy yellow hair. Back of head similar. Proboscis brownish yellow, short, rather stump-like; palpi normal, elongate, four-jointed, pubescent. Antennae with apparently two scapal joints nearly alike, rather short, slightly wider at the tip, the flagellar joints oval (only three are remaining, the rest being broken off); scape dark, flagellum brownish yellow.

Thorax.—Dorsum yellowish; a moderately broad, very shining black stripe in the middle from the anterior margin to the suture, slightly narrowed in front; a short, very shining, black stripe on each side of the median one, with an isolated black spot in front of it near the shoulders. Behind the suture, near the dorsal margin on each side is a very black shining triangular spot,

and on the dorsum (behind the suture) a pair of wide blackish stripes of normal nature reaching to the scutellum, which latter is small and yellow, the base a little blackish. Sides of thorax with a pinkish tinge, some short yellow hair on the pleurae and near the wing-roots; metanotum blackish. Prothorax of moderate enlargement, produced into a short stout neck.

Abdomen black, roughened; posterior margins of segments narrowly pale yellowish; belly similar. Ovipositor brownish yellow, enlarged at the base, the lower pair of valves much shorter than the upper ones, straight, and set a little further back.

Legs.—Coxae and trochanters both somewhat small, legs comparatively robust, yellow, with rather long close pubescence, the femora a little incrassated at the tip, and bearing a subapical blackish not very well-defined ring, tips of tibiae and tarsal joints narrowly blackish.

Wings nearly clear, very iridescent, a faint yellowish impression caused by the yellow veins; the "cross-veins" rather black. Auxiliary vein lying close to the 1st longitudinal vein, ending at about the middle of the wing, the 1st longitudinal ending a little beyond. The 2nd longitudinal vein begins at one-third of the wing, forks at about half its length, just under the end of the 1st vein, with the marginal cross-vein just before the tip of the latter.

The 3rd longitudinal vein originates a little before the fork of the 2nd, at a right angle, thence forming nearly another right angle before proceeding almost straight to the border parallel to the veins in front of and behind it. Basal section of 3rd vein fairly long, nearly in a line with the anterior cross-vein, which is of about the same length. The 4th vein forks close to the anterior cross-vein, the upper branch forks at about its middle, the branches parallel. The lower branch of the 4th vein simple, parallel with the 5th; posterior cross-vein just beyond fork of 4th vein; 3rd posterior cell pointed at base; 6th and 7th veins slightly sinuous. A small indistinct stigma over the tip of the 1st vein.

Described from a single ♀ in the Indian Museum from Kurseong, 7-ix-09, taken by Mr. D. F. Lynch.

Section V. AMALOPINI.

TRICHOCERA, Mg.

ocellata, Wlk., ♀. East Indies. Specimens agreeing with Walker's description are in the Indian Museum from Simla, whilst I have three other species described in MS. from India.

N.B.—After due deliberation I remove this genus from the Limnophilini to the Amalopini, with the characters of which it seems to agree much better. This is the only instance in which I have suggested the removal of any genus to a new section.

Three species of *Amalopis* in the Indian Museum will also be described by me subsequently.

Section VI. LIMNOPHILINI.

LIMNOPHILA, Macq.

terminalis, Wlk., ♀. Papua. Of the type (British Museum) there now only remains the head, thorax and one leg. Possibly may not be a *Limnophila*.

euchroma, Wlk., ♀. Gilolo. Type in British Museum, but legless. Being conspicuously marked it would be useful for comparison. Possibly does not belong to *Limnophila*: the antennae are missing.

selectissima, Wlk., ♂. Mysol. Type in fair condition in British Museum.

contingens, Wlk., ♂. Papua. Type has lost abdomen and legs. British Museum.

tresignata, Wlk., ♀. Papua. Type in fair condition in British Museum; being conspicuously marked, would be useful for comparative purposes.

N.B.—Of all these five species the types are the only specimens known, apparently. Osten Sacken has vouched for the last three species belonging to this genus.

opaca, Meij. Tijds. v. Ent., liv, 52 ♀, pl. iv, 44, wing.

EPIPHRAGMA, Os. Sac.

insignis, Wulp, ♂. Sumatra. Type in Amsterdam Museum in bad condition.

signata, Meij., ♂. Java. Tijds. v. Ent., liv, 52, pl. iv, 43, wing.

POECILOSTOLA, Sch.

pallens, Wulp, ♂. Java. Type in Leyden Museum.

GYNOPLISTIA, Westw.

jurgiosa, Wlk., ♂ ♀. Aroe Isles. The type ♂ and ♀ are still in good preservation at the British Museum.

fulviceps, Wlk., ♀. Papua (Dorey). Type in British Museum in good condition except for the missing abdomen.

melancholica, Wlk., ♂ ♀. Mysol. The types of both sexes are in the British Museum in good condition except for the missing abdomen of the ♀.

insolita, Wlk., ♀. Salawatti I. Type in good condition in the British Museum.

N.B.—I can trace no record of any of these four species having been taken since they were described.

jucunda, Os. Sac., ♂ ♀. Celebes. The two sexes were originally present in the Genoa Museum (from Kandari, South Celebes) but only one specimen now remains.

Gynoplistia 8-fasciata, mihi, sp. nov.

♀. S. Celebes. Long. 8 mm.

Head black; proboscis and palpi yellowish; antennae (damaged) yellowish, elongate.

Thorax wholly shining black; traces of greyish reflections at the sides.

Abdomen yellow, shining black at base, and brown on the emarginations of the segments, blackish at extreme tip. Ovipositor shining brownish yellow. Belly of the same colour as the upper side.

Legs.—Coxae, femora and tibiae bright yellow; tips of femora and tibiae narrowly blackish; tarsi brownish yellow, tips darker.

Wings pale yellowish grey, costal cell yellow. Three brown, moderately wide, indistinct bands across the wing. The first two begin at the 1st longitudinal vein; they are interrupted by the 2nd basal cell, and do not reach the posterior margin of the wing. The first band is near the base of the wing, the second begins at the origin of the 2nd longitudinal vein, the third is placed over the stigma at the costal margin, and in diminished form attains the hind margin of the wing through the posterior cross-vein and the last section of the 5th longitudinal vein. A brownish round spot around the apical half of the discal cell. The wing-tip is also rather broadly brownish. Halteres bright orange-yellow.

Described from one ♀ in the Vienna Museum from Patuhuang, South Celebes, taken January 1896 by Fruhstorfer.

Section VII. ANISOMERINI.**ERIOCERA**, Macq.

acrostacta, W., ♂ ♀ (*Limnobia*).

Oligomera javensis, Dol.

? *Limnobia diana*, Macq.

The types are in the Westermann and Wiedemann collections, from Java. Both sexes are described.

basilaris, W. (*Limnobia*). Java.

Both sexes described; types in Westermann's collection. Meijere has received it from several localities in Java.

mesopyrrha, W., ♂ ♀ (*Limnobia*). Java. Types (two ♂ ♂ and two ♀ ♀) in the Leyden Museum, with a fresh ♂ from Sumatra. The four "type" (?) specimens are referred to by Dr. Jentink in his notes to me as of the "old collection," and were presumably examined by Wiedemann, but this latter author in his descriptions only refers to the ♂.

verticalis, W., ♂ (*Megistocera*). Java. Type and other specimens in bad condition in the Leyden Museum. Also present, a ♂ in good condition from Java determined by Van der Wulp.

Megistocera atra of Doleschall is considered synonymous with this species. Meijere notes this and the previous species (Tijd. v. Ent., liv, 55).

nepalensis, Westw. (*Caloptera*). Nepal.

? *velutina*, Wlk.

This species is tolerably well distributed along the Himalayas in Nepal and in Assam, and is present in all the collections I have examined.

It seems to me that *velutina*, Wlk., is a synonym of it and that that author by error speaks of a large *brown* spot across the wing instead of a whitish one. Apart from this discrepancy the description applies perfectly, and being such a conspicuously marked species the synonymy is at least probable. (See *E. velutina*.)

bicolor, Mcq. (*Limnophila*). Bengal, Sumatra, Java. Meijere reports a ♂ from Java.

hilpa, Wlk., ♀ (*Pterocosmus*). Hongkong. The type (a ♀) is still in good condition in the British Museum. The species is not deleted from this list but Hongkong can hardly be considered in the Oriental Region.

velutina, Wlk., ♂ ♀ (*Pterocosmus*). ?=*nepalensis*, Westw. Assam, Nepal, Himalayas. . . . South China. The type ♂ and ♀ in the British Museum are still sufficiently well preserved for comparison. Numerous other specimens are present in this collection, but I am almost certain that this species is synonymous with Westwood's *nepalensis*.

sumatrensis, Mcq., ♂ (*Limnobia*). Sumatra.

albonotata, Loew, ♂ ♀ (*Limnobia*). Ceylon, also extends to Mozambique. Two ♀ ♀ in the Vienna Museum from Ceylon are probably this species. Mr. Edwards records it from several places in Ceylon, where it is seemingly common. It is also likely to be a variable species.

leucoteles, Wlk., ♂ (*Limnobia*). Singapore. Type (♂) in British Museum, legless, but otherwise in good condition.

plecioides, Wlk., ♂ (*Limnobia*). Singapore. Type in fair condition except that only one leg remains. In British Museum.

dichroa, Wlk., ♀ (*Limnobia*). Mount Ophir, Malacca. Type (♀) in British Museum in bad condition. A second ♀ is in better condition, but legless, yet, as the species is conspicuously marked it would be useful for comparison.

rubrescens, Wlk., ♂ (*Limnobia*). Borneo (Sarawak). The type ♂ in the British Museum is in fair condition.

pyrrhochroma, Wlk., ♂ (*Limnobia*). Borneo. Type is too bad for comparison. British Museum.

lunigera, Wlk., ♂ (*Pterocosmus*). Sarawak, Borneo. Type in British Museum in bad condition, except that the wing-markings are distinguishable.

infixa, Wlk., ♂ ♀ (*Pterocosmus*). Sarawak. Type ♂ and ♀ still in fairly good condition in the British Museum. Two more recent ♀ ♀ (from Sarawak also) have been added.

optabilis, Wlk., ♂ (*Pterocosmus*). Sarawak. Type (British Museum) (♂) valueless, reduced to a thorax and head. No further specimens have been recorded.

combinata, Wlk., ♀ (*Pterocosmus*). Sarawak. Type in British Museum, a ♂, damaged, but useful for comparison owing to conspicuous markings.

diluta, Wlk. (*Pterocosmus*). Sarawak. The British Museum type is valueless, the abdomen and other parts being missing. The sex is now undiscoverable, and was not stated by Walker.

albipuncta, Wulp, ♀. Java. The type is totally lost, but the Amsterdam Museum (where it had been) has other specimens in good condition, from Java, taken by Jacobson. Meijere reports recently a ♂ and several ♀ ♀ from Semarang, Java.

lunata, Westw. No sex stated. Sarawak.

morosa, Os. Sac., ♀. Makassar, Celebes.

selene, Os. Sac., ♀. Mt. Singalang (Sumatra). The types of both these species in mediocre condition in the Genoa Museum.

perennis, Os. Sac., ♂ ♀. Philippines.

mansueta, Os. Sac., ♂ ♀. Philippines. Types (presumably) in the Osten Sacken collection.

ferruginosa, Wulp, ♀. Java. The two type ♀ ♀ are still present in the Leyden Museum, but one is in bad condition. Meijere records a ♀ from Semarang, Java.

humberti, Os. Sac., ♀.

meleagris, *id.*, ♀.

pachyrrhina, *id.*, ♂ ♀ (*in cop.*).

The types of these three are in the Geneva Museum, all from Ceylon. Mr. Edwards records *humberti* from Pundaluoya, Ceylon, with an extra specimen from Uva P., Madulsima, with an all velvet-black thorax. This may be the undescribed ♂, he thinks. It agrees otherwise with *humberti* ♀.

crystalloptera, Os. Sac., ♂. Ceylon. A single imperfect type ♂ in the Berlin Museum. Mr. Edwards records it from Madulsima Pundaluoya and Haputale, all in Ceylon. He says the ♀, which appears not to have been met with before, is very like the ♂ but larger.

nigripennis, Meij., ♀. *Bijd. tot. de Dierk.*, xvii, 92 (1904). Java.

cingulata, Meij., ♂ ♀. *Tijd. v. Ent.*, liv, 58 (1911).

Mr. Edwards has recently described (*Ann. Mag. Nat. Hist.* (8), viii, No. 43, p. 64, 1911) four new species from Ceylon, the types of which are in the British Museum. These are *ctenophoroides*, ♂ ♀, p. 64 (including a ♀ variety with an all velvet-black thorax), from Kandy, 19-v-92, Kottawa, 24-v-92, and Pallamadulla, 17-vi-92, *scutellata*, ♂ ♀, p. 65, from Pundaluoya, Sept. and Oct. '92, *tuberculifera*, ♀, p. 66, Pundaluoya, Nov. '88 and July '89, and *fusca*, ♂ ♀, p. 66, Pundaluoya, April 1889.

N.B.—Quite a number of new species have come to my notice, and some of these are described below.

Eriocera badia, mihi, sp. nov.

♀. Ceylon. Long. 18 mm.

Head wholly blackish grey, vertex, under side of head, and proboscis with black hairs. Antennal scape blackish grey, flagellum pale yellow, short, of eight distinct joints. Palpi a little greyish white at the emargination of the joints on the under side.

Thorax rather deep reddish brown, with traces of four somewhat darker stripes. Scutellum and metanotum on the upper part a little lighter. Sides of thorax darker and more brownish.

Abdomen reddish brown, a little yellowish towards the sides of some of the segments; 2nd and 3rd segments wholly yellow on dorsum with very narrow black hind margins; base of each of the rest of the segments with a shining black band. (The abdomen has the appearance of being rather stretched longitudinally, and possibly a considerable part of these basal black bands would be invisible normally.) Ovipositor reddish brown, of moderate size.

Legs.—Coxae dark brown, pubescent; trochanters brownish yellow; femora and tibiae yellow with blackish tips; tarsi yellowish, blackish towards the tips.

Wings moderately dark brown; four posterior cells. A minute white spot or two near the tips of the marginal and 1st submarginal cells, and a small one lying across the tips of the 2nd submarginal and 1st posterior cells.

Halteres pale brownish grey.

Described from a single ♀ from Peradeniya, Ceylon, taken by Dr. Uzel, 25-xii-01.

Type in Vienna Museum.

Eriocera rufibasis, mihi, sp. nov.

♀. Lower Burma. Long. 16 mm.

Head, antennae, proboscis, palpi, all dark blackish grey.

Thorax wholly deep velvet-black.

Abdomen wholly deep velvet-black, except the first two segments which are orange-yellow. Belly similar to dorsum. Ovipositor black, the valves shining brownish yellow.

Legs dark brown, femora, tibiae and tarsal joints blacker.

Wings brown, darker anteriorly, clearer on hind margin: four posterior cells. Clear spots are placed as follows: a rather large one extending over the apical part of both basal cells; two smaller, round spots, one over the base of the 2nd longitudinal vein, the other above the fork of the 2nd vein. One at the tip of the marginal cell; two small ones (possibly in some specimens united) in the 1st submarginal cell; a larger one extending over the 2nd submarginal cell and 1st posterior cell;—all these latter spots placed on the border. All the posterior cells are somewhat clear, as is also the wing to some extent behind the 5th longitudinal vein. Halteres small, black.

Described from a single ♀ in the Vienna Museum from Tandong (4,000 ft.), Tenasserim, taken in May [*Fruhstorfer*].

***Eriocera semilimpida*, mihi, sp. nov.**

♂. Assam. Long. 12 mm.

Head wholly black, vertical protuberance with some black hairs; antennae black, shortly pubescent; palpi nearly black.

Thorax shining black, a little dark brown hair about the sides; mesonotal suture deeply cut; greyish reflections behind and below base of wing; scutellum shining black, soft black haired; metanotum shining black.

Abdomen.—1st segment livid on basal half, remainder black; next four segments reddish orange, hind borders a little darker, that of 5th blackish. Rest of abdomen black, including the genitalia, which are of moderate size, the only obvious parts being a tolerably large pair of claspers. Belly mainly as dorsum, 1st segment all black, 2nd black, except at base.

Legs wholly black, shortly pubescent.

Wings dark grey, slightly tinged with yellowish. Costal cell, 5th longitudinal vein, and distal part of wing from about the inner side of discal cell, rather dark brown, the colour extending not quite so far, proximally into the marginal and 5th posterior cells. Hind basal corner of wing more or less brown. Inner cross-vein placed soon after origin of 3rd vein, and before fork of 2nd; branches of 2nd rather close together, fork of upper branch occurs before one-fourth the length of that branch. Discal cell 6-sided, upper branch of 4th vein forked near tip, making five posterior cells; the three veinlets from the discal cell being equidistant; outer cross-vein just beyond middle of discal cell. Halteres black.

Described from one ♂ in the Pusa collection, taken in the Khasi Hills in September 1906.

Type in the Pusa collection.

N.B.—This species bears a close general resemblance to Macquart's *bicolor*, but there are several quite good points of difference between them. In *semilimpida* the head is black, not greyish; the thorax shining black, unmarked, not brownish grey with three black bands and some small spots; the basal segment of the abdomen is black, not orange; the coxae black, not tawny; the costa dark brown throughout its length, not clear on the whole proximal half as distinctly mentioned by Macquart and illustrated in his plate; and the whole proximal two-thirds of the wing (apart from the costa) in my species is pale grey, whereas in *bicolor* the whole wing is brown, with a broad clear median band, and a narrower one at the base. The venation is identical in both species.

***Eriocera plumbicincta*, mihi, sp. nov.**

♂. Assam, Darjiling. Long. 13 mm.

Head.—Frons and back of head deep velvet-black, with a little black pubescence. Frons with a cone-like projection above

each antenna. Eyes black, bare, 1st joint of scape long, cylindrical, black; 2nd very short, globular, yellowish: flagellum yellowish, with short black hairs; of five very elongated joints of diminishing length, the last one black. Palpi black, pubescent, 2nd joint the widest, 1st and 4th the longest.

Thorax deep velvet-black with short black pubescence; a slight dark reddish tinge above the neck. Scutellum deep black. Dorsum of metanotum bright reddish orange, bare.

Abdomen deep velvet-black. On the 2nd, 3rd, 4th and 5th segments, a broad shining lead-coloured band extending round the whole segment and covering it with the exception of a posterior marginal band of a width of one-fifth of the segment; 6th segment wholly deep black; 7th, basal half occupied by a similar leaden band, apical half black. Seen from behind, there is a silver sheen on the sides of the segments, genitalia conspicuous, bright orange-red, protected below by a blackish plate. Whole abdomen nearly bare.

Legs.—Coxae black, pubescent: femora and tibiae orange-yellow (the latter rather darker), both with black tips: tarsi dark brown, all the legs minutely pubescent.

Wings brown, deeper in the centre; costal border to just beyond the 1st longitudinal vein distinctly orange-yellow, the colour ending at tip of the auxiliary vein. Wing grey from just in front of the 6th vein to posterior margin. A good-sized white spot (approximately oval) placed obliquely across the basal cells, towards the distal ends, but quite clear of the discal cell. A smaller, circular white spot just above, and a little in front of the larger one, situated just beyond the middle of the marginal cell, and a white oval spot at apex of wing, just covering the tips of the two submarginal cells. Five posterior cells. Halteres black.

Described from one ♂ in the Indian Museum (type) from Ukhral, Manipur, captured by the Rev. W. Pettigrew, viii-08; and a second specimen (in the Pusa collection) taken by Mr. F. M. Howlett at Darjiling, 3—9-vi-09.

***Eriocera fenestrata*, mihi, sp. nov.**

♂ ♀. Assam, Tonkin. Long. 20 mm.

Head.—Frons broad, flat, dull black with sparse hair; ocellar triangle small; proboscis, antennae and palpi dark brown.

Thorax.—Dorsum orange-red, not shining, the colour at the sides sharply ending on a level with the wing-roots, but it gradually becomes bright orange on scutellum and metanotum; pleurae semi-translucent brown, slightly tinged with orange.

Abdomen with the basal half of each segment sublucid leaden grey, shining, posterior half dead black. The abdomen gradually widens from the base to the 6th segment, which is the widest, thence sharply narrowing. Ovipositor somewhat robust, dark brown, practically bare, the long terminal points shining red-brown.

Legs wholly very dark mahogany-brown, nearly black.

Wings brown on anterior half, the colour gradually fading away posteriorly to the grey hind margin.

A small (roughly crescent-shaped) hyaline spot across the 1st basal cell, entering the cell above and below, and situated close to the origin of the 3rd vein. Four posterior cells; discal cell 5-sided, the veinlets from its outer upper side almost parallel. Anterior cross-vein opposite fork of 2nd; posterior cross-vein at lower corner of discal cell; fork of upper branch of 2nd longitudinal vein just before its middle. Halteres black.

Described from a type ♂ in the Vienna Museum from Central Tonkin and a single ♀ (type) in the Pusa collection, taken in April 1905 in the Khasi Hills, Assam, at 1,000 to 3,000 feet altitude.

***Eriocera greenii*, mihi, sp. nov.**

♀. Ceylon and Java (?). Long. 16 mm.

Head dark grey, with black hairs. Frons broad, but very short, of uniform width, one-third the width of the head. Proboscis dark brown, with peculiar large, pale yellow, flattened, apparently two-jointed lamellae at the tip. Palpi dark blackish brown. Antennal scape blackish, with stiff black hairs, the tip of the 1st joint with a circlet of stronger ones; 2nd joint short; flagellum brownish yellow, becoming brown at the tip, covered with irregularly placed black hairs.

Thorax.—Dorsum very dark rich velvet-brown, with a few isolated short black hairs on anterior part. Two short blackish stripes towards the sides; no trace of a median stripe. Scutellum, metanotum and sides concolorous, all bare of pubescence; the region round the root of the wing blackish.

Abdomen rich dark brown; extreme base of 1st segment with a slightly yellowish grey tinge; base of 2nd and 3rd segments and posterior margin narrowly of remaining segments blackish. The abdomen bare except for a few short pale hairs on the hind margins of some of the apical segments. Ovipositor conical, blackish, dull, bare, terminal blades reddish yellow.

Legs.—Coxae rich dark brown, trochanters bright, lighter reddish brown, femora and tibiae bright brownish yellow, tips of both black, tarsi darker. All the legs finely black pubescent.

Wings wholly dark brown, a little darker on the costa near the base, and a little lighter in the anal and axillary cells. A small white spot near the tip of the marginal cell, and a still smaller similar one in the 1st submarginal cell; a larger (but still small) marginal white spot extending transversely over the tip of the 3rd vein. Venation as in *semilimpida*, except that the upper branch of the 4th vein not being forked, there are only four posterior cells. Halteres all black.

Described from a single specimen collected by Mr. E. E. Green at Kandy, 24-xi-09.

Type in Indian Museum.

N.B.—This species has some general resemblance to at least three others: to *albonotata*, Lw., from which the all-brown abdomen separates it; to *rufithorax*, mihi, and *fenestrata*, mihi, from which the brown thorax and yellow legs separate it. Three specimens (of which two are in very poor condition) in the Vienna Museum from Ceylon and Java are probably this species.
